CLAIMS

1. A process for altering the host range of *Bacillus* toxins which comprises recombining in vitro the variable region of two or more *Bacillus* toxin genes.

2. A process, according to claim 1, wherein the *Bacillus* is a *Bacillus thuringiensis*.

3. A process, according to claim 2, wherein variable regions of *Bacillus thuringiensis* var. *kurstaki* HD-1 and *Bacillus thuringiensis* var. *kurstaki* HD-73 are recombined in vitro to give genes encoding chimeric toxins having altered host ranges.

4. DNA, denoted pEW3, encoding a chimeric toxin having pesticidal activity, as follows:

```
                (start HD-73)                ATG GATAACAATC  400
CGAACATCAA TGAATGCATT CCTTATAATT GTTTAAGTAA CCCTGAAGTA
GAAGTATTAG GTGGAGAAAG AATAGAAACT GGTTACACCC CAATCGATAT  500
TTCCTTGTCG CTAACGCAAT TTCTTTTGAG TGAATTTGTT CCCGGTGCTG
GATTTGTGTT AGGACTAGTT GATATAATAT GGGGAATTTT TGGTCCCTCT  600
CAATGGGACG CATTTCTTGT ACAAATTGAA CAGTTAATTA ACCAAAGAAT
AGAAGAATTC GCTAGGAACC AAGCCATTTC TAGATTAGAA GGACTAAGCA  700
ATCTTTATCA AATTTACGCA GAATCTTTTA GAGAGTGGGA AGCAGATCCT
ACTAATCCAG CATTAAGAGA AGAGATGCGT ATTCAATTCA ATGACATGAA  800
CAGTGCCCTT ACAACCGCTA TTCCTCTTTT TGCAGTTCAA AATTATCAAG
TTCCTCTTTT ATCAGTATAT GTTCAAGCTG CAAATTTACA TTTATCAGTT  900
TTGAGAGATG TTTCAGTGTT TGGACAAAGG TGGGGATTTG ATGCCGCGAC
TATCAATAGT CGTTATAATG ATTTAACTAG GCTTATTGGC AACTATACAG 1000
ATTATGCTGT ACGCTGGTAC AATACGGGAT TAGAACGTGT ATGGGGACCG
GATTCTAGAG ATTGGGTAAG GTATAATCAA TTTAGAAGAG AATTAACACT 1100
AACTGTATTA GATATCGTTG CTCTGTTCCC GAATTATGAT AGTAGAAGAT
ATCCAATTCG AACAGTTTCC CAATTAACAA GAGAAATTTA TACAAACCCA 1200
GTATTAGAAA ATTTTGATGG TAGTTTTCGA GGCTCGGCTC AGGGCATAGA
AAGAAGTATT AGGAGTCCAC ATTTGATGGA TATACTTAAC AGTATAACCA 1300
TCTATACGGA TGCTCATAGG GGTTATTATT ATTGGTCAGG GCATCAAATA
ATGGCTTCTC CTGTAGGGTT TTCGGGGCCA GAATTCACTT TTCCGCTATA 1400
TGGAACTATG GGAAATGCAG CTCCACAACA ACGTATTGTT GCTCAACTAG
GTCAGGGCGT GTATAGAACA TTATCGTCCA CTTTATATAG AAGACCTTTT 1500
AATATAGGGA TAAATAATCA ACAACTATCT GTTCTTGACG GGACAGAATT
TGCTTATGGA ACCTCCTCAA ATTTGCCATC CGCTGTATAC AGAAAAAGCG 1600
GAACGGTAGA TTCGCTGGAT GAAATACCGC CACAGAATAA CAACGTGCCA
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21 CCTAGGCAAG GATTTAGTCA TCGATTAAGC CATGTTTCAA TGTTTCGTTC 1700

22 AGGCTTTAGT AATAGTAGTG TAAGTATAAT AAGAGCT (end hd-73)

(start HD-1) CCAACGT TTTCTTGGCA GCATCGCAGT 1900

23 GCTGAATTTA ATAATATAAT TCCTTCATCA CAAATTACAC AAATACCTTT

24 AACAAAATCT ACTAATCTTG GCTCTGGAAC TTCTGTCGTT AAAGGACCAG 2000

25 GATTTACAGG AGGAGATATT CTTCGAAGAA CTTCACCTGG CCAGATTTCA

26 ACCTTAAGAG TAAATATTAC TGCACCATTA TCACAAAGAT ATCGGGTAAG 2100

27 AATTCGCTAC GCTTCTACTA CAAATTTACA ATTCCATACA TCAATTGACG

28 GAAGACCTAT TAATCAGGGT AATTTTTCAG CAACTATGAG TAGTGGGAGT 2200

29 AATTTACAGT CCGGAAGCTT TAGGACTGTA GGTTTTACTA CTCCGTTTAA

30 CTTTTCAAAT GGATCAAGTG TATTTACGTT AAGTGCTCAT GTCTTCAATT 2300

31 CAGGCAATGA AGTTTATATA GATCGAATTG AATTTGTTCC GGCAGAAGTA

32 ACCTTTGAGG CAGAATATGA TTTAGAAAGA GCACAAAAGG CGGTGAATGA 2400

33 GCTGTTTACT TCTTCCAATC AAATCGGGTT AAAAACAGAT GTGACGGATT

34 ATCATATTGA TCAAGTATCC AATTTAGTTG AGTGTTTATC AGATGAATTT 2500

35 TGTCTGGATG AAAAACAAGA ATTGTCCGAG AAAGTCAAAC ATGCGAAGCG

36 ACTTAGTGAT GAGCGGAATT TACTTCAAGA TCCAAACTTC AGAGGGATCA 2600

37 ATAGACAACT AGACCGTGGC TGGAGAGGAA GTACGGATAT TACCATCCAA

38 GGAGGCGATG ACGTATTCAA AGAGAATTAC GTTACGCTAT TGGGTACCTT 2700

39 TGATGAGTGC TATCCAACGT ATTTATATCA AAAAATAGAT GAGTCGAAAT

40 TAAAAGCCTA TACCCGTTAT CAATTAAGAG GGTATATCGA AGATAGTCAA 2800

41 GACTTAGAAA TCTATTTAAT TCGCTACAAT GCAAAACATG AAACAGTAAA

42 TGTGCCAGGT ACGGGTTCCT TATGGCCGCT TTCAGCCCAA AGTCCAATCG 2900

43 GAAAGTGTGG AGAGCCGAAT CGATGCGCGC CACACCTTGA ATGGAATCCT

44 GACTTAGATT GTTCGTGTAG GGATGGAGAA AAGTGTGCCC ATCATTCGCA 3000

45 TCATTTCTCC TTAGACATTG ATGTAGGATG TACAGACTTA AATGAGGACC

46 TAGGTGTATG GGTGATCTTT AAGATTAAGA CGCAAGATGG GCACGCAAGA 3100

47 CTAGGGAATC TAGAGTTTCT CGAAGAGAAA CCATTAGTAG GAGAAGCGCT

48 AGCTCGTGTG AAAAGAGCGG AGAAAAAATG GAGAGACAAA CGTGAAAAAT 3200

49 TGGAATGGGA AACAAATATC GTTTATAAAG AGGCAAAAGA ATCTGTAGAT

50 GCTTTATTTG TAAACTCTCA ATATGATCAA TTACAAGCGG ATACGAATAT 3300

51 TGCCATGATT CATGCGGCAG ATAAACGTGT TCATAGCATT CGAGAAGCTT

ATCTGCCTGA GCTGTCTGTG ATTCCGGGTG TCAATGCGGC TATTTTTGAA 3400

GAATTAGAAG GGCGTATTTT CACTGCATTC TCCCTATATG ATGCGAGAAA

TGTCATTAAA AATGGTGATT TTAATAATGG CTTATCCTGC TGGAACGTGA 3500

AAGGGCATGT AGATGTAGAA GAACAAAACA ACCAACGTTC GGTCCTTGTT

CTTCCGGAAT GGGAAGCAGA AGTGTCACAA GAAGTTCGTG TCTGTCCGGG 3600

TCGTGGCTAT ATCCTTCGTG TCACAGCGTA CAAGGAGGGA TATGGAGAAG

GTTGCGTAAC CATTCATGAG ATCGAGAACA ATACAGACGA ACTGAAGTTT 3700

AGCAACTGCG TAGAAGAGGA AATCTATCCA AATAACACGG TAACGTGTAA

TGATTATACT GTAAATCAAG AAGAATACGG AGGTGCGTAC ACTTCTCGTA 3800

ATCGAGGATA TAACGAAGCT CCTTCCGTAC CAGCTGATTA TGCGTCAGTC

TATGAAGAAA AATCGTATAC AGATGGACGA AGAGAGAATC CTTGTGAATT 3900

TAACAGAGGG TATAGGGATT ACACGCCACT ACCAGTTGGT TATGTGACAA

AAGAATTAGA ATACTTCCCA GAAACCGATA AGGTATGGAT TGAGATTGGA 4000

GAAACGGAAG GAACATTTAT CGTGGACAGC GTGGAATTAC TCCTTATGGA

GGAA (end HD-1)

and equivalent nucleotide sequences coding for toxin EW3 with the following amino acid sequence:

MDNNPNINECIPYNCLSNPEVEVLGGERIE
TGYTPIDISLSLTQFLLSEFVPGAGFVLGL
VDIIWGIFGPSQWDAFLVQIEQLINQRIEE
FARNQAISRLEGLSNLYQIYAESFREWEAD
PTNPALREEMRIQFNDMNSALTTAIPLFAV
QNYQVPLLSVYVQAANLHLSVLRDVSVFGQ
RWGFDAATINSRYNDLTRLIGNYTDYAVRW
YNTGLERVWGPDSRDWVRYNQFRRELTLTV
LDIVALFPNYDSRRYPIRTVSQLTREIYTN
PVLENFDGSFRGSAQGIERSIRSPHLMDIL
NSITIYTDAHRGYYYWSGHQIMASPVGFSG
PEFTFPLYGTMGNAAPQQRIVAQLGQGVYR
TLSSTLYRRPFNIGINNQQLSVLDGTEFAY
GTSSNLPSAVYRKSGTVDSLDEIPPQNNNV
PPRQGFSHRLSHVSMFRSGFSNSSVSIIRA
PTFSWQHRSAEFNNIIPSSQITQIPLTKST
NLGSGTSVVKGPGFTGGDILRRTSPGQIST
LRVNITAPLSQRYRVRIRYASTTNLQFHTS
IDGRPINQGNFSATMSSGSNLQSGSFRTVG
FTTPFNFSNGSSVFTLSAHVFNSGNEVYID
RIEFVPAEVTFEAEYDLERAQKAVNELFTS
SNQIGLKTDVTDYHIDQVSNLVECLSDEFC
LDEKQELSEKVKHAKRLSDERNLLQDPNFR
GINRQLDRGWRGSTDITIQGGDDVFKENYV
TLLGTFDECYPTYLYQKIDESKLKAYTRYQ
LRGYIEDSQDLEIYLIRYNAKHETVNVPGT
GSLWPLSAQSPIGKCGEPNRCAPHLEWNPD
LDCSCRDGEKCAHHSHHFSLDIDVGCTDLN
EDLGVWVIFKIKTQDGHARLGNLEFLEEKP
LVGEALARVKRAEKKWRDKREKLEWETNIV
YKEAKESVDALFVNSQYDQLQADTNIAMIH
AADKRVHSIREAYLPELSVIPGVNAAIFEE
LEGRIFTAFSLYDARNVIKNGDFNNGLSCW
NVKGHVDVEEQNNQRSVLVLPEWEAEVSQE
VRVCPGRGYILRVTAYKEGYGEGCVTIHEI
ENNTDELKFSNCVEEEIYPNNTVTCNDYTV
NQEEYGGAYTSRNRGYNEAPSVPADYASVY
EEKSYTDGRRENPCEFNRGYRDYTPLPVGY
VTKELEYFPETDKVWIEIGETEGTFIVDSV
ELLLME E.

5. DNA, denoted pEW4, encoding a chimeric toxin, having pesticidal activity, as follows:

```
      (start HD-1)          ATGG ATAACAATCC GAACATCAAT
GAATGCATTC CTTATAATTG TTTAAGTAAC CCTGAAGTAG AAGTATTAGG 600
TGGAGAAAGA ATAGAAACTG GTTACACCCC AATCGATATT TCCTTGTCGC
TAACGCAATT TCTTTTGAGT GAATTTGTTC CCGGTGCTGG ATTTGTGTTA 700
GGACTAGTTG ATATAATATG GGGAATTTTT GGTCCCTCTC AATGGGACGC
ATTTCCTGTA CAAATTGAAC AGTTAATTAA CCAAAGAATA GAAGAATTCG 800
CTAGGAACCA AGCCATTTCT AGATTAGAAG GACTAAGCAA TCTTTATCAA
ATTTACGCAG AATCTTTTAG AGAGTGGGAA GCAGATCCTA CTAATCCAGC 900
ATTAAGAGAA GAGATGCGTA TTCAATTCAA TGACATGAAC AGTGCCCTTA
CAACCGCTAT TCCTCTTTTG GCAGTTCAAA ATTATCAAGT TCCTCTTTTA 1000
TCAGTATATG TTCAAGCTGC AAATTTACAT TTATCAGTTT TGAGAGATGT
TTCAGTGTTT GGACAAAGGT GGGGATTTGA TGCCGCGACT ATCAATAGTC 1100
GTTATAATGA TTTAACTAGG CTTATTGGCA ACTATACAGA TTATGCTGTG
CGCTGGTACA ATACGGGATT AGAGCGTGTA TGGGGACCGG ATTCTAGAGA 1200
TTGGGTAAGG TATAATCAAT TTAGAAGAGA GCTAACACTT ACTGTATTAG
ATATCGTTGC TCTATTCTCA AATTATGATA GTCGAAGGTA TCCAATTCGA 1300
ACAGTTTCCC AATTAACAAG AGAAATTTAT ACGAACCCAG TATTAGAAAA
TTTTGATGGT AGTTTTCGTG GAATGGCTCA GAGAATAGAA CAGAATATTA 1400
GGCAACCACA TCTTATGGAT ATCCTTAATA GTATAACCAT TTATACTGAT
GTGCATAGAG GCTTTAATTA TTGGTCAGGG CATCAAATAA CAGCTTCTCC 1500
TGTAGGGTTT TCAGGACCAG AATTCGCATT CCCTTTATTT GGGAATGCGG
GGAATGCAGC TCCACCCGTA CTTGTCTCAT TAACTGGTTT GGGGATTTTT 1600
AGAACATTAT CTTCACCTTT ATATAGAAGA ATTATACTTG GTTCAGGCCC
AAATAATCAG GAACTGTTTG TCCTTGATGG AACGGAGTTT TCTTTTGCCT 1700
CCCTAACGAC CAACTTGCCT TCCACTATAT ATAGACAAAG GGGTACAGTC
GATTCACTAG ATGTAATACC GCCACAGGAT AATAGTGTAC CACCTCGTGC 1800
GGGATTTAGC CATCGATTGA GTCATGTTAC AATGCTGAGC CAAGCAGCTG
GAGCAGTTTA CACCTTGAGA GCTCAACGT  (stop HD-1)
                  (start HD-73)          CCT ATGTTCTCTT
GGATACATCG TAGTGCTGAA TTTAATAATA TAATTGCATC GGATAGTATT 1800
ACTCAAATCC CTGCAGTGAA GGGAAACTTT CTTTTTAATG GTTCTGTAAT
TTCAGGACCA GGATTTACTG GTGGGGACTT AGTTAGATTA AATAGTAGTG 1900
GAAATAACAT TCAGAATAGA GGGTATATTG AAGTTCCAAT TCACTTCCCA
TCGACATCTA CCAGATATCG AGTTCGTGTA CGGTATGCTT CTGTAACCCC 2000
GATTCACCTC AACGTTAATT GGGGTAATTC ATCCATTTTT TCCAATACAG
TACCAGCTAC AGCTACGTCA TTAGATAATC TACAATCAAG TGATTTTGGT 2100
TATTTTGAAA GTGCCAATGC TTTTACATCT TCATTAGGTA ATATAGTAGG
TGTTAGAAAT TTTAGTGGGA CTGCAGGAGT GATAATAGAC AGATTTGAAT 2200
TTATTCCAGT TACTGCAACA CTCGAGGCTG AATATAATCT GGAAAGAGCG
CAGAAGGCGG TGAATGCGCT GTTTACGTCT ACAAACCAAC TAGGGCTAAA 2300
AACAAATGTA ACGGATTATC ATATTGATCA AGTGTCCAAT TTAGTTACGT
ATTTATCGGA TGAATTTTGT CTGGATGAAA AGCGAGAATT GTCCGAGAAA 2400
GTCAAACATG CGAAGCGACT CAGTGATGAA CGCAATTTAC TCCAAGATTC
AAATTTCAAA GACATTAATA GGCAACCAGA ACGTGGGTGG GGCGGAAGTA 2500
CAGGGATTAC CATCCAAGGA GGGGATGACG TATTTAAAGA AAATTACGTC
ACACTATCAG GTACCTTTGA TGAGTGCTAT CCAACATATT TGTATCAAAA 2600
AATCGATGAA TCAAAATTAA AAGCCTTTAC CCGTTATCAA TTAAGAGGGT
ATATCGAAGA TAGTCAAGAC TTAGAAATCT ATTTAATTCG CTACAATGCA 2700
AAACATGAAA CAGTAAATGT GCCAGGTACG GGTTCCTTAT GGCCGCTTTC
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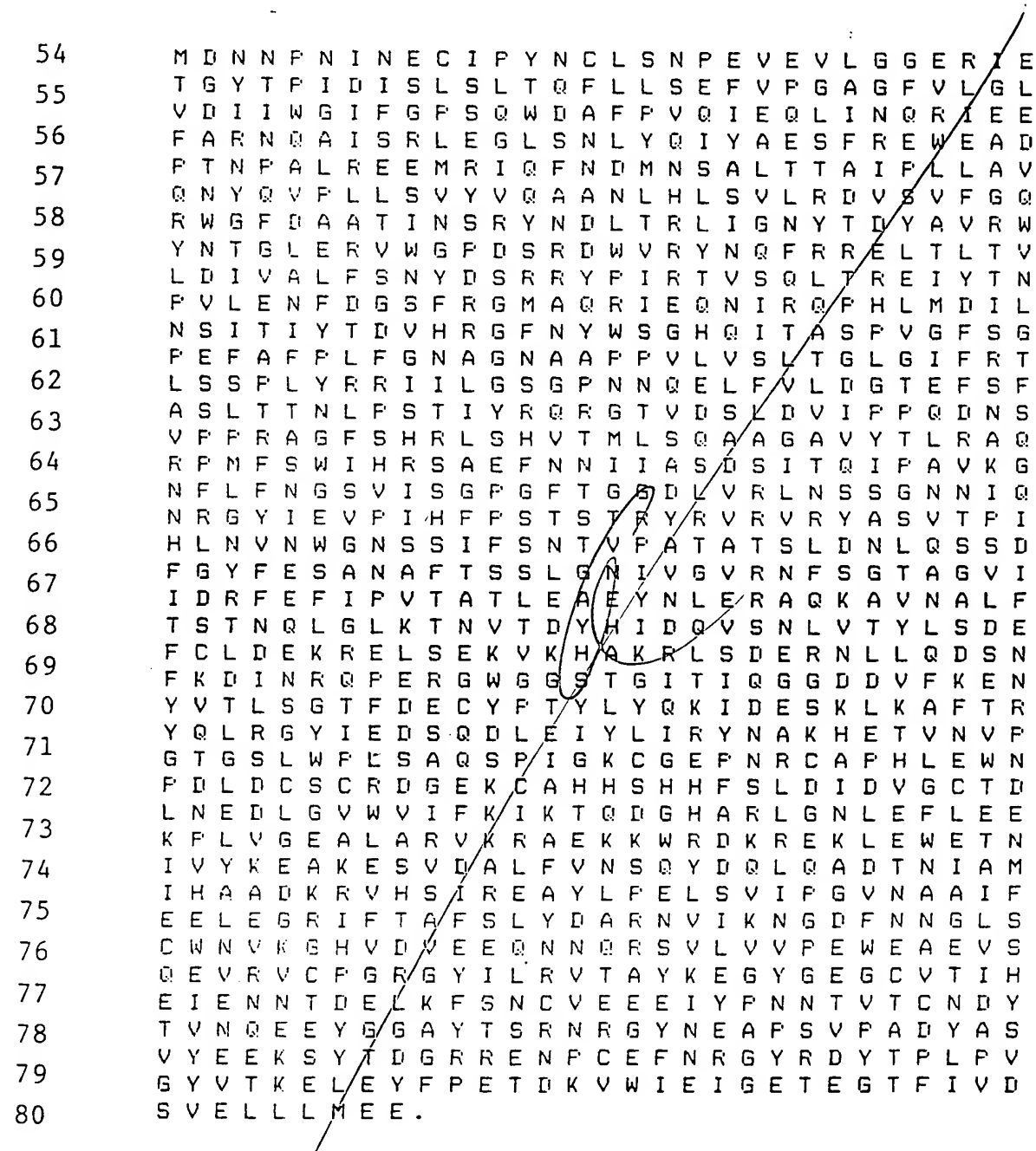
AGCCCAAAGT CCAATCGGAA AGTGTGGAGA GCCGAATCGA TGCGCGCCAC 2800
ACCTTGAATG GAATCCTGAC TTAGATTGTT CGTGTAGGGA TGGAGAAAAG
TGTGCCCATC ATTCGCATCA TTTCTCCTTA GACATTGATG TAGGATGTAC 2900
AGACTTAAAT GAGGACCTAG GTGTATGGGT GATCTTTAAG ATTAAGACGC
AAGATGGGCA CGCAAGACTA GGGAATCTAG AGTTTCTCGA AGAGAAACCA 3000
TTAGTAGGAG AAGCGCTAGC TCGTGTGAAA AGAGCGGAGA AAAAATGGAG
AGACAAACGT GAAAAATTGG AATGGGAAAC AAATATCGTT TATAAAGAGG 3100
CAAAAGAATC TGTAGATGCT TTATTTGTAA ACTCTCAATA TGATCAATTA
CAAGCGGATA CGAATATTGC CATGATTCAT GCGGCAGATA AACGTGTTCA 3200
TAGCATTCGA GAAGCTTATC TGCCTGAGCT GTCTGTGATT CCGGGTGTCA
ATGCGGCTAT TTTTGAAGAA TTAGAAGGGC GTATTTTCAC TGCATTCTCC 3300
CTATATGATG CGAGAAATGT CATTAAAAAT GGTGATTTTA ATAATGGCTT
ATCCTGCTGG AACGTGAAAG GGCATGTAGA TGTAGAAGAA CAAAACAACC 3400
AACGTTCGGT CCTTGTTGTT CCGGAATGGG AAGCAGAAGT GTCACAAGAA
GTTCGTGTCT GTCCGGGTCG TGGCTATATC CTTCGTGTCA CAGCGTACAA 3500
GGAGGGATAT GGAGAAGGTT GCGTAACCAT TCATGAGATC GAGAACAATA
CAGACGAACT GAAGTTTAGC AACTGCGTAG AAGAGGAAAT CTATCCAAAT 3600
AACACGGTAA CGTGTAATGA TTATACTGTA AATCAAGAAG AATACGGAGG
TGCGTACACT TCTCGTAATC GAGGATATAA CGAAGCTCCT TCCGTACCAG 3700
CTGATTATGC GTCAGTCTAT GAAGAAAAAT CGTATACAGA TGGACGAAGA
GAGAATCCTT GTGAATTTAA CAGAGGGTAT AGGGATTACA CGCCACTACC 3800
AGTTGGTTAT GTGACAAAAG AATTAGAATA CTTCCCAGAA ACCGATAAGG
TATGGATTGA GATTGGAGAA ACGGAAGGAA CATTTATCGT GGACAGCGTG 3900
GAATTACTCC TTATGGAGGA A (end HD-73)

and equivalent nucleotide sequences coding for toxin EW4 with the following amino acid sequence:



6. DNA, denoted pACB-1, encoding a chimeric toxin, having pesticidal activity, as follows:

```
3                    (start HD-73)                ATG GATAACAATC 400
4   CGAACATCAA TGAATGCATT CCTTATAATT GTTTAAGTAA CCCTGAAGTA
5   GAAGTATTAG GTGGAGAAAG AATAGAAACT GGTTACACCC CAATCGATAT 500
6   TTCCTTGTCG CTAACGCAAT TTCTTTTGAG TGAATTTGTT CCCGGTGCTG
7   GATTTGTGTT AGGACTAGTT GATATAATAT GGGGAATTTT TGGTCCTCT 600
8   CAATGGGACG CATTTCTTGT ACAAATTGAA CAGTTAATTA ACCAAAGAAT
9   AGAAGAATTC GCTAGGAACC AAGCCATTTC TAGATTAGAA GGACTAAGCA 700
10  ATCTTTATCA AATTTACGCA GAATCTTTTA GAGAGTGGGA AGCAGATCCT
11  ACTAATCCAG CATTAAGAGA AGAGATGCGT ATTCAATTCA ATGACATGAA 800
12  CAGTGCCCTT ACAACCGCTA TTCCTCTTTT TGCAGTTCAA AATTATCAAG
13  TTCCTCTTTT ATCAGTATAT GTTCAAGCTG CAAATTTACA TTTATCAGTT 900
14  TTGAGAGATG TTTCAGTGTT TGGACAAAGG TGGGGATTTG ATGCCGCGAC
15  TATCAATAGT CGTTATAATG ATTTAACTAG GCTTATTGGC AACTATACAG 1000
16  ATTATGCTGT ACGCTGGTAC AATACGGGAT TAGAACGTGT ATGGGGACCG
17  GATTCTAGAG ATTGGGTAAG GTATAATCAA TTTAGAAGAG AATTAACACT 1100
18  AACTGTATTA GATATCGTTG CTCTGTTCCC GAATTATGAT AGTAGAAGAT
19  ATCCAATTCG AACAGTTTCC CAATTAACAA GAGAAATTTA TACAAACCCA 1200
20  GTATTAGAAA ATTTTGATGG TAGTTTTCGA GGCTCGGCTC AGGGCATAGA
21  AAGAAGTATT AGGAGTCCAC ATTTGATGGA TATACTTAAC AGTATAACCA 1300
22  TCTATACGGA TGCTCATAGG GGTTATTATT ATTGGTCAGG GCATCAAATA
23  ATGGCTTCTC CTGTAGGGTT TTCGGGGCCA GAATTCACTT TTCCGCTATA 1400
24  TGGAACTATG GGAAATGCAG CTCCACAACA ACGTATTGTT GCTCAACTAG
25  GTCAGGGCGT GTATAGAACA TTATCGTCCA CTTTATATAG AAGACCTTTT 1500
26  AATATAGGGA TAAATAATCA ACAACTATCT GTTCTTGACG GGACAGAATT
27  TGCTTATGGA ACCTCCTCAA ATTTGCCATC CGCTGTATAC AGAAAAAGCG 1600
28  GAACGGTAGA TTCGCTGAAT GAAATACCGC CACAGAATAA CAACGTGCCA
29  CCTAGGCAAG AATTTAGTCA TCGATTAAGC CATGTTTCAA TGTTTCGTTC 1700
30  AGGCTTTAGT AATAGTAGTG TAAGTATAAT AAGAGCT (end hd-73)
31      (start HD-1)          CCAACGT TTTCTTGGCA GCATCGCAGT 1900
32  GCTGAATTTA ATAATATAAT TCCTTCATCA CAAATTACAC AAATACCTTT
33  AACAAAATCT ACTAATCTTG GCTCTGGAAC TTCTGTCGTT AAAGGACCAG 2000
34  GATTTACAGG AGGAGATATT CTTCGAAGAA CTTCACCTGG CCAGATTTCA
35  ACCTTAAGAG TAAATATTAC TGCACCATTA TCACAAAGAT ATCGGGTAAG 2100
36  AATTCGCTAC GCTTCTACTA CAAATTTACA ATTCCATACA TCAATTGACG
37  GAAGACCTAT TAATCAGGGT AATTTTTCAG CAACTATGAG TAGTGGGAGT 2200
38  AATTTACAGT CCGGAAGCTT TAGGACTGTA GGTTTTACTA CTCCGTTTAA
39  CTTTTCAAAT GGATCAAGTG TATTTACGTT AAGTGCTCAT GTCTTCAATT 2300
40  CAGGCAATGA AGTTTATATA GATCGAATTG AATTTGTTCC GGCAGAAGTA
41  ACCTTTGAGG CAGAATATGA TTTAGAAAGA GCACAAAAGG CGGTGAATGA 2400
42  GCTGTTTACT TCTTCCAATC AAATCGGGTT AAAAACAGAT GTGACGGATT
43  ATCATATTGA TCAAGTATCC AATTTAGTTG AGTGTTTATC AGATGAATTT 2500
44  TGTCTGGATG AAAAACAAGA ATTGTCCGAG AAAGTCAAAC ATGCGAAGCG
45  ACTTAGTGAT GAGCGGAATT TACTTCAAGA TCCAAACTTC AGAGGGATCA 2600
46  ATAGACAACT AGACCGTGGC TGGAGAGGAA GTACGGATAT TACCATCCAA
47  GGAGGCGATG ACGTATTCAA AGAGAATTAC GTTACGCTAT TGGGTACCTT 2700
48  TGATGAGTGC TATCCAACGT ATTTATATCA AAAAATAGAT GAGTCGAAAT
49  TAAAAGCCTA TACCCGTTAT CAATTAAGAG GGTATATCGA AGATAGTCAA 2800
50  GACTTAGAAA TCTATTTAAT TCGCTACAAT GCAAAACATG AAACAGTAAA
51  TGTGCCAGGT ACGGGTTCCT TATGGCCGCT TTCAGCCCAA AGTCCAATCG 2900
52  GAAAGTGTGG AGAGCCGAAT CGATGCGCGC CACACCTTGA ATGGAATCCT
53  GACTTAGATT GTTCGTGTAG GGATGGAGAA AAGTGTGCCC ATCATTCGCA 3000
54  TCATTTCTCC TTAGACATTG ATGTAGGATG TACAGACTTA AATGAGGACC
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TAGGTGTATG GGTGATCTTT AAGATTAAGA CGCAAGATGG GCACGCAAGA 3100
CTAGGGAATC TAGAGTTTCT CGAAGAGAAA CCATTAGTAG GAGAAGCGCT
AGCTCGTGTG AAAAGAGCGG AGAAAAAATG GAGAGACAAA CGTGAAAAAT 3200
TGGAATGGGA AACAAATATC GTTTATAAAG AGGCAAAAGA ATCTGTAGAT
GCTTTATTTG TAAACTCTCA ATATGATCAA TTACAAGCGG ATACGAATAT 3300
TGCCATGATT CATGCGGCAG ATAAACGTGT TCATAGCATT CGAGAAGCTT
ATCTGCCTGA GCTGTCTGTG ATTCCGGGTG TCAATGCGGC TATTTTTGAA 3400
GAATTAGAAG GGCGTATTTT CACTGCATTC TCCCTATATG ATGCGAGAAA
TGTCATTAAA AATGGTGATT TTAATAATGG CTTATCCTGC TGGAACGTGA 3500
AAGGGCATGT AGATGTAGAA GAACAAAACA ACCAACGTTC GGTCCTTGTT
CTTCCGGAAT GGGAAGCAGA AGTGTCACAA GAAGTTCGTG TCTGTCCGGG 3600
TCGTGGCTAT ATCCTTCGTG TCACAGCGTA CAAGGAGGGA TATGGAGAAG
GTTGCGTAAC CATTCATGAG ATCGAGAACA ATACAGACGA ACTGAAGTTT 3700
AGCAACTGCG TAGAAGAGGA AATCTATCCA AATAACACGG TAACGTGTAA
TGATTATACT GTAAATCAAG AAGAATACGG AGGTGCGTAC ACTTCTCGTA 3800
ATCGAGGATA TAACGAAGCT CCTTCCGTAC CAGCTGATTA TGCGTCAGTC
TATGAAGAAA AATCGTATAC AGATGGACGA AGAGAGAATC CTTGTGAATT 3900
TAACAGAGGG TATAGGGATT ACACGCCACT ACCAGTTGGT TATGTGACAA
AAGAATTAGA ATACTTCCCA GAAACCGATA AGGTATGGAT TGAGATTGGA 4000
GAAACGGAAG GAACATTTAT CGTGGACAGC GTGGAATTAC TCCTTATGGA
GGAA (end HD-1)
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and equivalent nucleotide sequences coding for toxin ACB-1 with the following amino acid sequence:

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M D N N P N I N E C I P Y N C L S N P E V E V L G G E R I E
T G Y T P I D I S L S L T Q F L L S E F V P G A G F V L G L
V D I I W G I F G P S Q W D A F L V Q I E Q L I N Q R I E E
F A R N Q A I S R L E G L S N L Y Q I Y A E S F R E W E A D
P T N P A L R E E M R I Q F N D M N S A L T T A I P L F A V
Q N Y Q V P L L S V Y V Q A A N L H L S V L R D V S V F G Q
R W G F D A A T I N S R Y N D L T R L I G N Y T D Y A V R W
Y N T G L E R V W G P D S R D W V R Y N Q F R R E L T L T V
L D I V A L F P N Y D S R R Y P I R T V S Q L T R E I Y T N
P V L E N F D G S F R G S A Q G I E R S I R S P H L M D I L
N S I T I Y T D A H R G Y Y Y W S G H Q I M A S P V G F S G
P E F T F P L Y G T M G N A A P Q Q R I V A Q L G Q G V Y R
T L S S T L Y R R P F N I G I N N Q Q L S V L D G T E F A Y
G T S S N L P S A V Y R K S G T V D S L N E I P P Q N N N V
P P R Q E F S H R L S H V S M F R S G F S N S S V S I I R A
P T F S W Q H R S A E F N N I I P S S Q I T Q I P L T K S T
N L G S G T S V V K G P G F T G G D I L R R T S P G Q I S T
L R V N I T A P L S Q R Y R V R I R Y A S T T N L Q F H T S
I D G R P I N Q G N F S A T M S S G S N L Q S G S F R T V G
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 97    F T T P F N F S N G S S V F T L S A H V F N S G N E V Y I D
 98    R I E F V P A E V T F E A E Y D L E R A Q K A V N E L F T S
 99    S N Q I G L K T D V T D Y H I D Q V S N L V E C L S D E F C
100    L D E K Q E L S E K V K H A K R L S D E R N L L Q D P N F R
101    G I N R Q L D R G W R G S T D I T I Q G G D D V F K E N Y V
102    T L L G T F D E C Y P T Y L Y Q K I D E S K L K A Y T R Y Q
103    L R G Y I E D S Q D L E I Y L I R Y N A K H E T V N V P G T
104    G S L W P L S A Q S P I G K C G E P N R C A P H L E W N P D
105    L D C S C R D G E K C A H H S H H F S L D I D V G C T D L N
106    E D L G V W V I F K I K T Q D G H A R L G N L E F L E E K P
107    L V G E A L A R V K R A E K K W R D K R E K L E W E T N I V
108    Y K E A K E S V D A L F V N S Q Y D Q L Q A D T N I A M I H
109    A A D K R V H S I R E A Y L P E L S V I P G V N A A I F E E
110    L E G R I F T A F S L Y D A R N V I K N G D F N N G L S C W
111    N V K G H V D V E E Q N N Q R S V L V L P E W E A E V S Q E
112    V R V C P G R G Y I L R V T A Y K E G Y G E G C V T I H E I
113    E N N T D E L K F S N C V E E E I Y P N N T V T C N D Y T V
114    N Q E E Y G G A Y T S R N R G Y N E A P S V P A D Y A S V Y
115    E E K S Y T D G R R E N P C E F N R G Y R D Y T P L P V G Y
116    V T K E L E Y F P E T D K V W I E I G E T E G T F I V D S V
117    E L L L M E E.
```

1 7. DNA, denoted pSYW1, encoding a chimeric toxin,
2 having pesticidal activity, as follows:

```
3                    (start HD-73)              ATG GATAACAATC 400
4  CGAACATCAA TGAATGCATT CCTTATAATT GTTTAAGTAA CCCTGAAGTA
5  GAAGTATTAG GTGGAGAAAG AATAGAAACT GGTTACACCC CAATCGATAT 500
6  TTCCTTGTCG CTAACGCAAT TTCTTTTGAG TGAATTTGTT CCCGGTGCTG
7  GATTTGTGTT AGGACTAGTT GATATAATAT GGGGAATTTT TGGTCCCTCT 600
8  CAATGGGACG CATTTCTTGT ACAAATTGAA CAGTTAATTA ACCAAAGAAT
9  AGAAGAATTC GCTAGGAACC AAGCCATTTC TAGATTAGAA GGACTAAGCA 700
10 ATCTTTATCA AATTTACGCA GAATCTTTTA GAGAGTGGGA AGCAGATCCT
11 ACTAATCCAG CATTAAGAGA AGAGATGCGT ATTCAATTCA ATGACATGAA 800
12 CAGTGCCCTT ACAACCGCTA TTCCTCTTTT TGCAGTTCAA AATTATCAAG
13 TTCCTCTTTT ATCAGTATAT GTTCAAGCTG CAAATTTACA TTTATCAGTT 900
14 TTGAGAGATG TTTCAGTGTT TGGACAAAGG TGGGGATTTG ATGCCGCGAC
15 TATCAATAGT CGTTATAATG ATTTAACTAG GCTTATTGGC AACTATACAG 1000
16 ATTATGCTGT ACGCTGGTAC AATACGGGAT TAGAACGTGT ATGGGGACCG
17 GATTCTAGAG ATTGGGTAAG GTATAATCAA TTTAGAAGAG AATTAACACT 1100
18 AACTGTATTA GATATCGTTG CTCTGTTCCC GAATTATGAT AGTAGAAGAT
19 ATCCAATTCG AACAGTTTCC CAATTAACAA GAGAAATTTA TACAAACCCA 1200
20 GTATTAGAAA ATTTTGATGG TAGTTTTCGA GGCTCGGCTC AGGGCATAGA
21 AGGAAGTATT AGGAGTCCAC ATTTGATGGA TATACTTAAC AGTATAACCA 1300
22 TCTATACGGA TGCTCATAAA GGGGAATATT ATTGGTCAGG GCATCAAATA
23 ATGGCTTCTC CTGTAGGGTT TTCGGGGCCA GAATTCACTT TTCCGCTATA 1400
24 TGGAACTATG GGAAATGCAG CTCCACAACA ACGTATTGTT GCTCAACTAG
25 GTCAGGGCGT GTATAGAACA TTATCGTCCA CTTTATATAG AAGACCTTTT 1500
26 AATATAGGGA TAAATAATCA ACAACTATCT GTTCTTGACG GGACAGAATT
```

```
27    TGCTTATGGA ACCTCCTCAA ATTTGCCATC CGCTGTATAC AGAAAAAGCG 1600
28    GAACGGTAGA TTCGCTGGAT GAAATACCGC CACAGAATAA CAACGTGCCA
29    CCTAGGCAAG GATTTAGTCA TCGATTAAGC CATGTTTCAA TGTTTCGTTC 1700
30    AGGCTTTAGT AATAGTAGTG TAAGTATAAT AAGAGCT (end hd-73)
31        (start HD-1)          CCAACGT TTTCTTGGCA GCATCGCAGT 1900
32    GCTGAATTTA ATAATATAAT TCCTTCATCA CAAATTACAC AAATACCTTT
33    AACAAAATCT ACTAATCTTG GCTCTGGAAC TTCTGTCGTT AAAGGACCAG 2000
34    GATTTACAGG AGGAGATATT CTTCGAAGAA CTTCACCTGG CCAGATTTCA
35    ACCTTAAGAG TAAATATTAC TGCACCATTA TCACAAAGAT ATCGGGTAAG 2100
36    AATTCGCTAC GCTTCTACTA CAAATTTACA ATTCCATACA TCAATTGACG
37    GAAGACCTAT TAATCAGGGT AATTTTTCAG CAACTATGAG TAGTGGGAGT 2200
38    AATTTACAGT CCGGAAGCTT TAGGACTGTA GGTTTTACTA CTCCGTTTAA
39    CTTTTCAAAT GGATCAAGTG TATTTACGTT AAGTGCTCAT GTCTTCAATT 2300
40    CAGGCAATGA AGTTTATATA GATCGAATTG AATTTGTTCC GGCAGAAGTA
41    ACCTTTGAGG CAGAATATGA TTTAGAAAGA GCACAAAAGG CGGTGAATGA 2400
42    GCTGTTTACT TCTTCCAATC AAATCGGGTT AAAAACAGAT GTGACGGATT
43    ATCATATTGA TCAAGTATCC AATTTAGTTG AGTGTTTATC AGATGAATTT 2500
44    TGTCTGGATG AAAAACAAGA ATTGTCCGAG AAAGTCAAAC ATGCGAAGCG
45    ACTTAGTGAT GAGCGGAATT TACTTCAAGA TCCAAACTTC AGAGGGATCA 2600
46    ATAGACAACT AGACCGTGGC TGGAGAGGAA GTACGGATAT TACCATCCAA
47    GGAGGCGATG ACGTATTCAA AGAGAATTAC GTTACGCTAT TGGGTACCTT 2700
48    TGATGAGTGC TATCCAACGT ATTTATATCA AAAAATAGAT GAGTCGAAAT
49    TAAAAGCCTA TACCCGTTAT CAATTAAGAG GGTATATCGA AGATAGTCAA 2800
50    GACTTAGAAA TCTATTTAAT TCGCTACAAT GCAAAACATG AAACAGTAAA
51    TGTGCCAGGT ACGGGTTCCT TATGGCCGCT TTCAGCCCAA AGTCCAATCG 2900
52    GAAAGTGTGG AGAGCCGAAT CGATGCGCGC CACACCTTGA ATGGAATCCT
53    GACTTAGATT GTTCGTGTAG GGATGGAGAA AAGTGTGCCC ATCATTCGCA 3000
54    TCATTTCTCC TTAGACATTG ATGTAGGATG TACAGACTTA AATGAGGACC
55    TAGGTGTATG GGTGATCTTT AAGATTAAGA CGCAAGATGG GCACGCAAGA 3100
56    CTAGGGAATC TAGAGTTTCT CGAAGAGAAA CCATTAGTAG GAGAAGCGCT
57    AGCTCGTGTG AAAAGAGCGG AGAAAAAATG GAGAGACAAA CGTGAAAAAT 3200
58    TGGAATGGGA AACAAATATC GTTTATAAAG AGGCAAAAGA ATCTGTAGAT
59    GCTTTATTTG TAAACTCTCA ATATGATCAA TTACAAGCGG ATACGAATAT 3300
60    TGCCATGATT CATGCGGCAG ATAAACGTGT TCATAGCATT CGAGAAGCTT
61    ATCTGCCTGA GCTGTCTGTG ATTCCGGGTG TCAATGCGGC TATTTTTGAA 3400
62    GAATTAGAAG GGCGTATTTT CACTGCATTC TCCCTATATG ATGCGAGAAA
63    TGTCATTAAA AATGGTGATT TTAATAATGG CTTATCCTGC TGGAACGTGA 3500
64    AAGGGCATGT AGATGTAGAA GAACAAAACA ACCAACGTTC GGTCCTTGTT
65    CTTCCGGAAT GGGAAGCAGA AGTGTCACAA GAAGTTCGTG TCTGTCCGGG 3600
66    TCGTGGCTAT ATCCTTCGTG TCACAGCGTA CAAGGAGGGA TATGGAGAAG
67    GTTGCGTAAC CATTCATGAG ATCGAGAACA ATACAGACGA ACTGAAGTTT 3700
68    AGCAACTGCG TAGAAGAGGA AATCTATCCA AATAACACGG TAACGTGTAA
69    TGATTATACT GTAAATCAAG AAGAATACGG AGGTGCGTAC ACTTCTCGTA 3800
70    ATCGAGGATA TAACGAAGCT CCTTCCGTAC CAGCTGATTA TGCGTCAGTC
71    TATGAAGAAA AATCGTATAC AGATGGACGA AGAGAGAATC CTTGTGAATT 3900
72    TAACAGAGGG TATAGGGATT ACACGCCACT ACCAGTTGGT TATGTGACAA
73    AAGAATTAGA ATACTTCCCA GAAACCGATA AGGTATGGAT TGAGATTGGA 4000
74    GAAACGGAAG GAACATTTAT CGTGGACAGC GTGGAATTAC TCCTTATGGA
75    GGAA (end HD-1)
```

and equivalent nucleotide sequences coding for toxin SYW1 with the following amino acid sequence:

MDNNPNINECIPYNCLSNPEVEVLGGERIE
TGYTPIDISLSLTQFLLSEFVPGAGFVLGL
VDIIWGIFGPSQWDAFLVQIEQLINQRIEE
FARNQAISRLEGLSNLYQIYAESFREWEAD
PTNPALREEMRIQFNDMNSALTTAIPLFAV
QNYQVPLLSVYVQAANLHLSVLRDVSVFGQ
RWGFDAATINSRYNDLTRLIGNYTDYAVRW
YNTGLERVWGPDSRDWVRYNQFRRELTLTV
LDIVALFPNYDSRRYPIRTVSQLTREIYTN
PVLENFDGSFRGSAQGIEGSIRSPHLMDIL
NSITIYTDAHKGEYYWSGHQIMASPVGFSG
PEFTFPLYGTMGNAAPQQRIVAQLGQGVYR
TLSSTLYRRPFNIGINNQQLSVLDGTEFAY
GTSSNLPSAVYRKSGTVDSLDEIPPQNNNV
PPRQGFSHRLSHVSMFRSGFSNSSVSIIRA
PTFSWQHRSAEFNNIIPSSQITQIPLTKST
NLGSGTSVVKGPGFTGGDILRRTSPGQIST
LRVNITAPLSQRYRVRIRYASTTNLQFHTS
IDGRPINQGNFSATMSSGSNLQSGSFRTVG
FTTPFNFSNGSSVFTLSAHVFNSGNEVYID
RIEFVPAEVTFEAEYDLERAQKAVNELFTS
SNQIGLKTDVTDYHIDQVSNLVECLSDEFC
LDEKQELSEKVKHAKRLSDERNLLQDPNFR
GINRQLDRGWRGSTDITIQGGDDVFKENYV
TLLGTFDECYPTYLYQKIDESKLKAYTRYQ
LRGYIEDSQDLEIYLIRYNAKHETVNVPGT
GSLWPLSAQSPIGKCGEPNRCAPHLEWNPD
LDCSCRDGEKCAHHSHHFSLDIDVGCTDLN
EDLGVWVIFKIKTQDGHARLGNLEFLEEKP
LVGEALARVKRAEKKWRDKREKLEWETNIV
YKEAKESVDALFVNSQYDQLQADTNIAMIH
AADKRVHSIREAYLPELSVIPGVNAAIFEE
LEGRIFTAFSLYDARNVIKNGDFNNGLSCW
NVKGHVDVEEQNNQRSVLVLPEWEAEVSQE
VRVCPGRGYILRVTAYKEGYGEGCVTIHEI
ENNTDELKFSNCVEEEIYPNNTVTCNDYTV
NQEEYGGAYTSRNRGYNEAPSVPADYASVY
EEKSYTDGRRENPCEFNRGYRDYTPLPVGY
VTKELEYFPETDKVWIEIGETEGTFIVDSV
ELLLMEE.

8. A chimeric toxin, EW3, having pesticidal activity, having the following amino acid sequence:

M D N N P N I N E C I P Y N C L S N P E V E V L G G E R I E
T G Y T P I D I S L S L T Q F L L S E F V P G A G F V L G L
V D I I W G I F G P S Q W D A F L V Q I E Q L I N Q R I E E
F A R N Q A I S R L E G L S N L Y Q I Y A E S F R E W E A D
P T N P A L R E E M R I Q F N D M N S A L T T A I P L F A V
Q N Y Q V P L L S V Y V Q A A N L H L S V L R D V S V F G Q
R W G F D A A T I N S R Y N D L T R L I G N Y T D Y A V R W
Y N T G L E R V W G P D S R D W V R Y N Q F R R E L T L T V
L D I V A L F P N Y D S R R Y P I R T V S Q L T R E I Y T N
P V L E N F D G S F R G S A Q G I E R S I R S P H L M D I L
N S I T I Y T D A H R G Y Y Y W S G H Q I M A S P V G F S G
P E F T F P L Y G T M G N A A P Q Q R I V A Q L G Q G V Y R
T L S S T L Y R R P F N I G I N N Q Q L S V L D G T E F A Y
G T S S N L P S A V Y R K S G T V D S L D E I P P Q N N N V
P P R Q G F S H R L S H V S M F R S G F S N S S V S I I R A
P T F S W Q H R S A E F N N I I P S S Q I T Q I P L T K S T
N L G S G T S V V K G P G F T G G D I L R R T S P G Q I S T
L R V N I T A P L S Q R Y R V R I R Y A S T T N L Q F H T S
I D G R P I N Q G N F S A T M S S G S N L Q S G S F R T V G
F T T P F N F S N G S S V F T L S A H V F N S G N E V Y I D
R I E F V P A E V T F E A E Y D L E R A Q K A V N E L F T S
S N Q I G L K T D V T D Y H I D Q V S N L V E C L S D E F C
L D E K Q E L S E K V K H A K R L S D E R N L L Q D P N F R
G I N R Q L D R G W R G S T D I T I Q G G D D V F K E N Y V
T L L G T F D E C Y P T Y L Y Q K I D E S K L K A Y T R Y Q
L R G Y I E D S Q D L E I Y L I R Y N A K H E T V N V P G T
G S L W P L S A Q S P I G K C G E P N R C A P H L E W N P D
L D C S C R D G E K C A H H S H H F S L D I D V G C T D L N
E D L G V W V I F K I K T Q D G H A R L G N L E F L E E K P
L V G E A L A R V K R A E K K W R D K R E K L E W E T N I V
Y K E A K E S V D A L F V N S Q Y D Q L Q A D T N I A M I H
A A D K R V H S I R E A Y L P E L S V I P G V N A A I F E E
L E G R I F T A F S L Y D A R N V I K N G D F N N G L S C W
N V K G H V D V E E Q N N Q R S V L V L P E W E A E V S Q E
V R V C P G R G Y I L R V T A Y K E G Y G E G C V T I H E I
E N N T D E L K F S N C V E E E I Y P N N T V T C N D Y T V
N Q E E Y G G A Y T S R N R G Y N E A P S V P A D Y A S V Y
E E K S Y T D G R R E N P C E F N R G Y R D Y T P L P V G Y
V T K E L E Y F P E T D K V W I E I G E T E G T F I V D S V
E L L L M E E

and muteins thereof which do not alter the protein secondary structure.

9. A chimeric toxin, EW4, having pesticidal activity, having the following amino acid sequence:

MDNNPNINECIPYNCLSNPEVEVLGGERIE
TGYTPIDISLSLTQFLLSEFVPGAGFVLGL
VDIIWGIFGPSQWDAFPVQIEQLINQRIEE
FARNQAISRLEGLSNLYQIYAESFREWEAD
PTNPALREEMRIQFNDMNSALTTAIPLLAV
QNYQVPLLSVYVQAANLHLSVLRDVSVFGQ
RWGFDAATINSRYNDLTRLIGNYTDYAVRW
YNTGLERVWGPDSRDWVRYNQFRRELTLTV
LDIVALFSNYDSRRYPIRTVSQLTREIYTN
PVLENFDGSFRGMAQRIEQNIRQPHLMDIL
NSITIYTDVHRGFNYWSGHQITASPVGFSG
PEFAFPLFGNAGNAAPPVLVSLTGLGIFRT
LSSPLYRRIILGSGPNNQELFVLDGTEFSF
ASLTTNLPSTIYRQRGTVDSLDVIPPQDNS
VPPRAGFSHRLSHVTMLSQAAGAVYTLRAQ
RPMFSWIHRSAEFNNIIASDSITQIPAVKG
NFLFNGSVISGPGFTGGDLVRLNSSGNNIQ
NRGYIEVPIHFPSTSTRYRVRVRYASVTPI
HLNVNWGNSSIFSNTVPATATSLDNLQSSD
FGYFESANAFTSSLGNIVGVRNFSGTAGVI
IDRFEFIPVTATLEAEYNLERAQKAVNALF
TSTNQLGLKTNVTDYHIDQVSNLVTYLSDE
FCLDEKRELSEKVKHAKRLSDERNLLQDSN
FKDINRQPERGWGGSTGITIQGGDDVFKEN
YVTLSGTFDECYPTYLYQKIDESKLKAFTR
YQLRGYIEDSQDLEIYLIRYNAKHETVNVP
GTGSLWPLSAQSPIGKCGEPNRCAPHLEWN
PDLDCSCRDGEKCAHHSHHFSLDIDVGCTD
LNEDLGVWVIFKIKTQDGHARLGNLEFLEE
KPLVGEALARVKRAEKKWRDKREKLEWETN
IVYKEAKESVDALFVNSQYDQLQADTNIAM
IHAADKRVHSIREAYLPELSVIPGVNAAIF
EELEGRIFTAFSLYDARNVIKNGDFNNGLS
CWNVKGHVDVEEQNNQRSVLVVPEWEAEVS
QEVRVCPGRGYILRVTAYKEGYGEGCVTIH
EIENNTDELKFSNCVEEEIYPNNTVTCNDY
TVNQEEYGGAYTSRNRGYNEAPSVPADYAS
VYEEKSYTDGRRENPCEFNRGYRDYTPLPV
GYVTKELEYFPETDKVWIEIGETEGTFIVD
SVELLLMEE

and muteins thereof which do not alter the protein secondary structure.

10. A chimeric toxin, ACB-1, having pesticidal activity, having the following amino acid sequence:

```
MDNNPNINECIPYNCLSNPEVEVLGGERIE
TGYTPIDISLSLTQFLLSEFVPGAGFVLGL
VDIIWGIFGPSQWDAFLVQIEQLINQRIEE
FARNQAISRLEGLSNLYQIYAESFREWEAD
PTNPALREEMRIQFNDMNSALTTAIPLFAV
QNYQVPLLSVYVQAANLHLSVLRDVSVFGQ
RWGFDAATINSRYNDLTRLIGNYTDYAVRW
YNTGLERVWGPDSRDWVRYNQFRRELTLTV
LDIVALFPNYDSRRYPIRTVSQLTREIYTN
PVLENFDGSFRGSAQGIERSIRSPHLMDIL
NSITIYTDAHRGYYYWSGHQIMASPVGFSG
PEFTFPLYGTMGNAAPQQRIVAQLGQGVYR
TLSSTLYRRPFNIGINNQQLSVLDGTEFAY
GTSSNLPSAVYRKSGTVDSLNEIPPQNNNV
PPRQEFSHRLSHVSMFRSGFSNSSVSIIRA
PTFSWQHRSAEFNNIIPSSQITQIPLTKST
NLGSGTSVVKGPGFTGGDILRRTSPGQIST
LRVNITAPLSQRYRVRIRYASTTNLQFHTS
IDGRPINQGNFSATMSSGSNLQSGSFRTVG
FTTPFNFSNGSSVFTLSAHVFNSGNEVYID
RIEFVPAEVTFEAEYDLERAQKAVNELFTS
SNQIGLKTDVTDYHIDQVSNLVECLSDEFC
LDEKQELSEKVKHAKRLSDERNLLQDPNFR
GINRQLDRGWRGSTDITIQGGDDVFKENYV
TLLGTFDECYPTYLYQKIDESKLKAYTRYQ
LRGYIEDSQDLEIYLIRYNAKHETVNVPGT
GSLWPLSAQSPIGKCGEPNRCAPHLEWNPD
LDCSCRDGEKCAHHSHHFSLDIDVGCTDLN
EDLGVWVIFKIKTQDGHARLGNLEFLEEKP
LVGEALARVKRAEKKWRDKREKLEWETNIV
YKEAKESVDALFVNSQYDQLQADTNIAMIH
AADKRVHSIREAYLPELSVIPGVNAAIFEE
LEGRIFTAFSLYDARNVIKNGDFNNGLSCW
NVKGHVDVEEQNNQRSVLVLPEWEAEVSQE
VRVCPGRGYILRVTAYKEGYGEGCVTIHEI
ENNTDELKFSNCVEEEIYPNNTVTCNDYTV
NQEEYGGAYTSRNRGYNEAPSVPADYASVY
EEKSYTDGRRENPCEFNRGYRDYTPLPVGY
VTKELEYFPETDKVWIEIGETEGTFIVDSV
ELLLMEE
```

and muteins thereof which do not alter the protein secondary structure.

11. A chimeric toxin, SYW1, having pesticidal activity, having the following amino acid sequence:

```
MDNNPNINECIPYNCLSNPEVEVLGGERIE
TGYTPIDISLSLTQFLLSEFVPGAGFVLGL
VDIIWGIFGPSQWDAFLVQIEQLINQRIEE
FARNQAISRLEGLSNLYQIYAESFREWEAD
PTNPALREEMRIQFNDMNSALTTAIPLFAV
QNYQVPLLSVYVQAANLHLSVLRDVSVFGQ
RWGFDAATINSRYNDLTRLIGNYTDYAVRW
YNTGLERVWGPDSRDWVRYNQFRRELTLTV
LDIVALFPNYDSRRYPIRTVSQLTREIYTN
PVLENFDGSFRGSAQGIEGSIRSPHLMDIL
NSITIYTDAHKGEYYWSGHQIMASPVGFSG
PEFTFPLYGTMGNAAPQQRIVAQLGQGVYR
TLSSTLYRRPFNIGINNQQLSVLDGTEFAY
GTSSNLPSAVYRKSGTVDSLDEIPPQNNNV
PPRQGFSHRLSHVSMFRSGFSNSSVSIIRA
PTFSWQHRSAEFNNIIPSSQITQIPLTKST
NLGSGTSVVKGPGFTGGDILRRTSPGQIST
LRVNITAPLSQRYRVRIRYASTTNLQFHTS
IDGRPINQGNFSATMSSGSNLQSGSFRTVG
FTTPFNFSNGSSVFTLSAHVFNSGNEVYID
RIEFVPAEVTFEAEYDLERAQKAVNELFTS
SNQIGLKTDVTDYHIDQVSNLVECLSDEFC
LDEKQELSEKVKHAKRLSDERNLLQDPNFR
GINRQLDRGWRGSTDITIQGGDDVFKENYV
TLLGTFDECYPTYLYQKIDESKLKAYTRYQ
LRGYIEDSQDLEIYLIRYNAKHETVNVPGT
GSLWPLSAQSPIGKCGEPNRCAPHLEWNPD
LDCSCRDGEKCAHHSHHFSLDIDVGCTDLN
EDLGVWVIFKIKTQDGHARLGNLEFLEEKP
LVGEALARVKRAEKKWRDKREKLEWETNIV
YKEAKESVDALFVNSQYDQLQADTNIAMIH
AADKRVHSIREAYLPELSVIPGVNAAIFEE
LEGRIFTAFSLYDARNVIKNGDFNNGLSCW
NVKGHVDVEEQNNQRSVLVLPEWEAEVSQE
VRVCPGRGYILRVTAYKEGYGEGCVTIHEI
ENNTDELKFSNCVEEEIYPNNTVTCNDYTV
NQEEYGGAYTSRNRGYNEAPSVPADYASVY
EEKSYTDGRRENPCEFNRGYRDYTPLPVGY
VTKELEYFPETDKVWIEIGETEGTFIVDSV
ELLLMEE
```

and muteins thereof which do not alter the protein secondary structure.

12. A pesticidal composition comprising pesticide-containing substantially intact cells having prolonged pesticidal activity when applied to the environment of a target pest, wherein said pesticide, is a chimeric toxin, is intracellular and is produced as a result of expression of a heterologous gene encoding said chimeric toxin in said cell.

13. A pesticidal composition according to claim 12, wherein said cells are killed under protease deactivating or cell wall strengthening conditions, while retaining pesticidal activity.

14. A pesticidal composition, according to claim 12, wherein said cells are prokaryotes selected from the group consisting of Enterobacteriaceae, Bacillaceae, Rhizobiaceae, Spirillaceae, Lactobacillaceae, Pseudomonadaceae, Azotobacteraceae, and Nitrobacteraceae; or lower eukaryotes selected from the group consisting of Phycomycetes, Ascomycetes, and Basidiomycetes.

15. A pesticidal composition, according to claim 14, wherein said prokaryote is a Bacillus specie selected from a pesticide-producing strain of Bacillus thuringiensis, consisting of B. thuringiensis M-7, B. thuringiensis var. kurstaki, B. thuringiensis var. finitimus, B. thuringiensis var. alesti, B. thuringiensis var. sotto, B. thuringiensis var. dendrolimus, B. thuringiensis var. kenyae, B. thuringiensis var. galleriae, B. thuringiensis var. canadensis, B. thuringiensis var. entomocidus, B. thuringiensis var. subtoxicus, B. thuringiensis var. aizawai, B. thuringiensis var. morrisoni, B. thuringiensis var. ostriniae, B. thuringiensis var. tolworthi, B. thuringiensis var. darmstadiensis,

B. thuringiensis var. toumanoffi, B. thuringiensis var. kyushuensis, B. thuringiensis var. thompsoni, B. thuringiensis var. pakistani, B. thuringiensis var. israelensis, B. thuringiensis var. indiana, B. thuringiensis var. dakota, B. thuringiensis var. tohokuensis, B. thuringiensis var. kumanotoensis, B. thuringiensis var. tochigiensis, B. thuringiensis var. colmeri, B. thuringiensis var. wuhanensis, B. thuringiensis var. tenebrionis, B. thuringiensis var. thuringiensis, and other Bacillus species selected from B. cereus, B. moritai, B. popilliae, B. lentimorbus, and B. sphaericus.

16. A method of protecting plants against pests which comprises applying to said plants an effective amount of a pesticidal composition comprising pesticide-containing substantially intact unicellular microorganisms, wherein said pesticide is a chimeric toxin, is intracellular, and is produced as a result of expression of a heterologous gene encoding said chimeric toxin in said microorganism, and said microorganism is treated under conditions which prolong the pesticidal activity when said composition is applied to the environment of a target pest.

17. A method according to claim 16, wherein said microorganisms are prokaryotes selected from the group consisting of Enterobacteriaceae, Bacillaceae, Rhizobiaceae, Spirillaceae, Lactobacillaceae, Pseudomonadaceae, Azotobacteraceae, and Nitrobacteraceae; or lower eukaryotes, selected from the group consisting of Phycomycetes, Ascomycetes, and Basidiomycetes.

18. A method according to claim 16, wherein said unicellular microorganisms are killed under protease deactivating or cell wall strengthening conditions, while retaining pesticidal activity.

19. Substantially intact unicellular microorganism cells containing an intracellular chimeric toxin, which toxin is a result of expression of a heterologous gene encoding said chimeric toxin, wherein said cells are killed under protease deactivating or cell wall strengthening conditions, while retaining pesticidal activity when said cell is applied to the environment of a target pest.

20. Cells according to claim 19, wherein said microorganism is a Pseudomonad and said toxin is derived from a B. thuringiensis.

21. A pesticidal composition, according to claim 12, wherein said gene, denoted pEW3, encoding a chimeric toxin, is as follows:

```
                (start HD-73)                ATG GATAACAATC 400
CGAACATCAA TGAATGCATT CCTTATAATT GTTTAAGTAA CCCTGAAGTA
GAAGTATTAG GTGGAGAAAG AATAGAAACT GGTTACACCC CAATCGATAT 500
TTCCTTGTCG CTAACGCAAT TTCTTTTGAG TGAATTTGTT CCCGGTGCTG
GATTTGTGTT AGGACTAGTT GATATAATAT GGGGAATTTT TGGTCCCTCT 600
CAATGGGACG CATTTCTTGT ACAAATTGAA CAGTTAATTA ACCAAAGAAT
AGAAGAATTC GCTAGGAACC AAGCCATTTC TAGATTAGAA GGACTAAGCA 700
ATCTTTATCA AATTTACGCA GAATCTTTTA GAGAGTGGGA AGCAGATCCT
ACTAATCCAG CATTAAGAGA AGAGATGCGT ATTCAATTCA ATGACATGAA 800
CAGTGCCCTT ACAACCGCTA TTCCTCTTTT TGCAGTTCAA AATTATCAAG
TTCCTCTTTT ATCAGTATAT GTTCAAGCTG CAAATTTACA TTTATCAGTT 900
TTGAGAGATG TTTCAGTGTT TGGACAAAGG TGGGGATTTG ATGCCGCGAC
TATCAATAGT CGTTATAATG ATTTAACTAG GCTTATTGGC AACTATACAG 1000
ATTATGCTGT ACGCTGGTAC AATACGGGAT TAGAACGTGT ATGGGGACCG
GATTCTAGAG ATTGGGTAAG GTATAATCAA TTTAGAAGAG AATTAACACT 1100
AACTGTATTA GATATCGTTG CTCTGTTCCC GAATTATGAT AGTAGAAGAT
ATCCAATTCG AACAGTTTCC CAATTAACAA GAGAAATTTA TACAAACCCA 1200
GTATTAGAAA ATTTTGATGG TAGTTTTCGA GGCTCGGCTC AGGGCATAGA
```

16 AAGAAGTATT AGGAGTCCAC ATTTGATGGA TATACTTAAC AGTATAACCA 1300
17 TCTATACGGA TGCTCATAGG GGTTATTATT ATTGGTCAGG GCATCAAATA
18 ATGGCTTCTC CTGTAGGGTT TTCGGGGCCA GAATTCACTT TTCCGCTATA 1400
19 TGGAACTATG GGAAATGCAG CTCCACAACA ACGTATTGTT GCTCAACTAG
20 GTCAGGGCGT GTATAGAACA TTATCGTCCA CTTTATATAG AAGACCTTTT 1500
21 AATATAGGGA TAAATAATCA ACAACTATCT GTTCTTGACG GGACAGAATT
22 TGCTTATGGA ACCTCCTCAA ATTTGCCATC CGCTGTATAC AGAAAAAGCG 1600
23 GAACGGTAGA TTCGCTGGAT GAAATACCGC CACAGAATAA CAACGTGCCA
24 CCTAGGCAAG GATTTAGTCA TCGATTAAGC CATGTTTCAA TGTTTCGTTC 1700
25 AGGCTTTAGT AATAGTAGTG TAAGTATAAT AAGAGCT (end HD-73)
26 (start HD-1) CCAACGT TTTCTTGGCA GCATCGCAGT 1900
27 GCTGAATTTA ATAATATAAT TCCTTCATCA CAAATTACAC AAATACCTTT
28 AACAAAATCT ACTAATCTTG GCTCTGGAAC TTCTGTCGTT AAAGGACCAG 2000
29 GATTTACAGG AGGAGATATT CTTCGAAGAA CTTCACCTGG CCAGATTTCA
30 ACCTTAAGAG TAAATATTAC TGCACCATTA TCACAAAGAT ATCGGGTAAG 2100
31 AATTCGCTAC GCTTCTACTA CAAATTTACA ATTCCATACA TCAATTGACG
32 GAAGACCTAT TAATCAGGGT AATTTTTCAG CAACTATGAG TAGTGGGAGT 2200
33 AATTTACAGT CCGGAAGCTT TAGGACTGTA GGTTTTACTA CTCCGTTTAA
34 CTTTTCAAAT GGATCAAGTG TATTTACGTT AAGTGCTCAT GTCTTCAATT 2300
35 CAGGCAATGA AGTTTATATA GATCGAATTG AATTTGTTCC GGCAGAAGTA
36 ACCTTTGAGG CAGAATATGA TTTAGAAAGA GCACAAAAGG CGGTGAATGA 2400
37 GCTGTTTACT TCTTCCAATC AAATCGGGTT AAAAACAGAT GTGACGGATT
38 ATCATATTGA TCAAGTATCC AATTTAGTTG AGTGTTTATC AGATGAATTT 2500
39 TGTCTGGATG AAAAACAAGA ATTGTCCGAG AAAGTCAAAC ATGCGAAGCG
40 ACTTAGTGAT GAGCGGAATT TACTTCAAGA TCCAAACTTC AGAGGGATCA 2600
41 ATAGACAACT AGACCGTGGC TGGAGAGGAA GTACGGATAT TACCATCCAA
42 GGAGGCGATG ACGTATTCAA AGAGAATTAC GTTACGCTAT TGGGTACCTT 2700
43 TGATGAGTGC TATCCAACGT ATTTATATCA AAAAATAGAT GAGTCGAAAT
44 TAAAAGCCTA TACCCGTTAT CAATTAAGAG GGTATATCGA AGATAGTCAA 2800
45 GACTTAGAAA TCTATTTAAT TCGCTACAAT GCAAAACATG AAACAGTAAA
46 TGTGCCAGGT ACGGGTTCCT TATGGCCGCT TTCAGCCCAA AGTCCAATCG 2900
47 GAAAGTGTGG AGAGCCGAAT CGATGCGCGC CACACCTTGA ATGGAATCCT
48 GACTTAGATT GTTCGTGTAG GGATGGAGAA AAGTGTGCCC ATCATTCGCA 3000
49 TCATTTCTCC TTAGACATTG ATGTAGGATG TACAGACTTA AATGAGGACC
50 TAGGTGTATG GGTGATCTTT AAGATTAAGA CGCAAGATGG GCACGCAAGA 3100
51 CTAGGGAATC TAGAGTTTCT CGAAGAGAAA CCATTAGTAG GAGAAGCGCT
AGCTCGTGTG AAAAGAGCGG AGAAAAAATG GAGAGACAAA CGTGAAAAAT 3200
TGGAATGGGA AACAAATATC GTTTATAAAG AGGCAAAAGA ATCTGTAGAT
GCTTTATTTG TAAACTCTCA ATATGATCAA TTACAAGCGG ATACGAATAT 3300
TGCCATGATT CATGCGGCAG ATAAACGTGT TCATAGCATT CGAGAAGCTT
ATCTGCCTGA GCTGTCTGTG ATTCCGGGTG TCAATGCGGC TATTTTTGAA 3400
GAATTAGAAG GGCGTATTTT CACTGCATTC TCCCTATATG ATGCGAGAAA
TGTCATTAAA AATGGTGATT TTAATAATGG CTTATCCTGC TGGAACGTGA 3500
AAGGGCATGT AGATGTAGAA GAACAAAACA ACCAACGTTC GGTCCTTGTT
CTTCCGGAAT GGGAAGCAGA AGTGTCACAA GAAGTTCGTG TCTGTCCGGG 3600
TCGTGGCTAT ATCCTTCGTG TCACAGCGTA CAAGGAGGGA TATGGAGAAG
GTTGCGTAAC CATTCATGAG ATCGAGAACA ATACAGACGA ACTGAAGTTT 3700
AGCAACTGCG TAGAAGAGGA AATCTATCCA AATAACACGG TAACGTGTAA
TGATTATACT GTAAATCAAG AAGAATACGG AGGTGCGTAC ACTTCTCGTA 3800
ATCGAGGATA TAACGAAGCT CCTTCCGTAC CAGCTGATTA TGCGTCAGTC
TATGAAGAAA AATCGTATAC AGATGGACGA AGAGAGAATC CTTGTGAATT 3900
TAACAGAGGG TATAGGGATT ACACGCCACT ACCAGTTGGT TATGTGACAA
AAGAATTAGA ATACTTCCCA GAAACCGATA AGGTATGGAT TGAGATTGGA 4000
GAAACGGAAG GAACATTTAT CGTGGACAGC GTGGAATTAC TCCTTATGGA
GGAA (end HD-1)

and equivalent nucleotide sequences coding for toxin EW3 with the following amino acid sequence:

MDNNPNINECIPYNCLSNPEVEVLGGERIE
TGYTPIDISLSLTQFLLSEFVPGAGFVLGL
VDIIWGIFGPSQWDAFLVQIEQLINQRIEE
FARNQAISRLEGLSNLYQIYAESFREWEAD
PTNPALREEMRIQFNDMNSALTTAIPLFAV
QNYQVPLLSVYVQAANLHLSVLRDVSVFGQ
RWGFDAATINSRYNDLTRLIGNYTDYAVRW
YNTGLERVWGPDSRDWVRYNQFRRELTLTV
LDIVALFPNYDSRRYPIRTVSQLTREIYTN
PVLENFDGSFRGSAQGIERSIRSPHLMDIL
NSITIYTDAHRGYYYWSGHQIMASPVGFSG
PEFTFPLYGTMGNAAPQQRIVAQLGQGVYR
TLSSTLYRRPFNIGINNQQLSVLDGTEFAY
GTSSNLPSAVYRKSGTVDSLDEIPPQNNNV
PPRQGFSHRLSHVSMFRSGFSNSSVSIIRA
PTFSWQHRSAEFNNIIPSSQITQIPLTKST
NLGSGTSVVKGPGFTGGDILRRTSPGQIST
LRVNITAPLSQRYRVRIRYASTTNLQFHTS
IDGRPINQGNFSATMSSGSNLQSGSFRTVG
FTTPFNFSNGSSVFTLSAHVFNSGNEVYID
RIEFVPAEVTFEAEYDLERAQKAVNELFTS
SNQIGLKTDVTDYHIDQVSNLVECLSDEFC
LDEKQELSEKVKHAKRLSDERNLLQDPNFR
GINRQLDRGWRGSTDITIQGGDDVFKENYV
TLLGTFDECYPTYLYQKIDESKLKAYTRYQ
LRGYIEDSQDLEIYLIRYNAKHETVNVPGT
GSLWPLSAQSPIGKCGEPNRCAPHLEWNPD
LDCSCRDGEKCAHHSHHFSLDIDVGCTDLN
EDLGVWVIFKIKTQDGHARLGNLEFLEEKP
LVGEALARVKRAEKKWRDKREKLEWETNIV
YKEAKESVDALFVNSQYDQLQADTNIAMIH
AADKRVHSIREAYLPELSVIPGVNAAIFEE
LEGRIFTAFSLYDARNVIKNGDFNNGLSCW
NVKGHVDVEEQNNQRSVLVLPEWEAEVSQE
VRVCPGRGYILRVTAYKEGYGEGCVTIHEI
ENNTDELKFSNCVEEEIYPNNTVTCNDYTV
NQEEYGGAYTSRNRGYNEAPSVPADYASVY
EEKSYTDGRRENPCEFNRGYRDYTPLPVGY
VTKELEYFPETDKVWIEIGETEGTFIVDSV
ELLLMEE.

22. A pesticidal composition, according to claim 12, wherein said gene, denoted pEW4, encoding a chimeric toxin, is as follows:

```
      (start HD-1)          ATGG ATAACAATCC GAACATCAAT
GAATGCATTC CTTATAATTG TTTAAGTAAC CCTGAAGTAG AAGTATTAGG 600
TGGAGAAAGA ATAGAAACTG GTTACACCCC AATCGATATT TCCTTGTCGC
TAACGCAATT TCTTTTGAGT GAATTTGTTC CCGGTGCTGG ATTTGTGTTA 700
GGACTAGTTG ATATAATATG GGGAATTTTT GGTCCCTCTC AATGGGACGC
ATTTCCTGTA CAAATTGAAC AGTTAATTAA CCAAAGAATA GAAGAATTCG 800
CTAGGAACCA AGCCATTTCT AGATTAGAAG GACTAAGCAA TCTTTATCAA
ATTTACGCAG AATCTTTTAG AGAGTGGGAA GCAGATCCTA CTAATCCAGC 900
ATTAAGAGAA GAGATGCGTA TTCAATTCAA TGACATGAAC AGTGCCCTTA
CAACCGCTAT TCCTCTTTTG GCAGTTCAAA ATTATCAAGT TCCTCTTTTA 1000
TCAGTATATG TTCAAGCTGC AAATTTACAT TTATCAGTTT TGAGAGATGT
TTCAGTGTTT GGACAAAGGT GGGGATTTGA TGCCGCGACT ATCAATAGTC 1100
GTTATAATGA TTTAACTAGG CTTATTGGCA ACTATACAGA TTATGCTGTG
CGCTGGTACA ATACGGGATT AGAGCGTGTA TGGGGACCGG ATTCTAGAGA 1200
TTGGGTAAGG TATAATCAAT TTAGAAGAGA GCTAACACTT ACTGTATTAG
ATATCGTTGC TCTATTCTCA AATTATGATA GTCGAAGGTA TCCAATTCGA 1300
ACAGTTTCCC AATTAACAAG AGAAATTTAT ACGAACCCAG TATTAGAAAA
TTTTGATGGT AGTTTTCGTG GAATGGCTCA GAGAATAGAA CAGAATATTA 1400
GGCAACCACA TCTTATGGAT ATCCTTAATA GTATAACCAT TTATACTGAT
GTGCATAGAG GCTTTAATTA TTGGTCAGGG CATCAAATAA CAGCTTCTCC 1500
TGTAGGGTTT TCAGGACCAG AATTCGCATT CCCTTTATTT GGGAATGCGG
GGAATGCAGC TCCACCCGTA CTTGTCTCAT TAACTGGTTT GGGGATTTTT 1600
AGAACATTAT CTTCACCTTT ATATAGAAGA ATTATACTTG GTTCAGGCCC
AAATAATCAG GAACTGTTTG TCCTTGATGG AACGGAGTTT TCTTTTGCCT 1700
CCCTAACGAC CAACTTGCCT TCCACTATAT ATAGACAAAG GGGTACAGTC
GATTCACTAG ATGTAATACC GCCACAGGAT AATAGTGTAC CACCTCGTGC 1800
GGGATTTAGC CATCGATTGA GTCATGTTAC AATGCTGAGC CAAGCAGCTG
GAGCAGTTTA CACCTTGAGA GCTCAACGT  (stop HD-1)
                (start HD-73)          CCT ATGTTCTCTT
GGATACATCG TAGTGCTGAA TTTAATAATA TAATTGCATC GGATAGTATT 1800
ACTCAAATCC CTGCAGTGAA GGGAAACTTT CTTTTTAATG GTTCTGTAAT
TTCAGGACCA GGATTTACTG GTGGGGACTT AGTTAGATTA AATAGTAGTG 1900
GAAATAACAT TCAGAATAGA GGGTATATTG AAGTTCCAAT TCACTTCCCA
TCGACATCTA CCAGATATCG AGTTCGTGTA CGGTATGCTT CTGTAACCCC 2000
GATTCACCTC AACGTTAATT GGGGTAATTC ATCCATTTTT TCCAATACAG
TACCAGCTAC AGCTACGTCA TTAGATAATC TACAATCAAG TGATTTTGGT 2100
TATTTTGAAA GTGCCAATGC TTTTACATCT TCATTAGGTA ATATAGTAGG
TGTTAGAAAT TTTAGTGGGA CTGCAGGAGT GATAATAGAC AGATTTGAAT 2200
TTATTCCAGT TACTGCAACA CTCGAGGCTG AATATAATCT GGAAAGAGCG
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CAGAAGGCGG TGAATGCGCT GTTTACGTCT ACAAACCAAC TAGGGCTAAA 2300
AACAAATGTA ACGGATTATC ATATTGATCA AGTGTCCAAT TTAGTTACGT
ATTTATCGGA TGAATTTTGT CTGGATGAAA AGCGAGAATT GTCCGAGAAA 2400
GTCAAACATG CGAAGCGACT CAGTGATGAA CGCAATTTAC TCCAAGATTC
AAATTTCAAA GACATTAATA GGCAACCAGA ACGTGGGTGG GGCGGAAGTA 2500
CAGGGATTAC CATCCAAGGA GGGGATGACG TATTTAAAGA AAATTACGTC
ACACTATCAG GTACCTTTGA TGAGTGCTAT CCAACATATT TGTATCAAAA 2600
AATCGATGAA TCAAAATTAA AAGCCTTTAC CCGTTATCAA TTAAGAGGGT
ATATCGAAGA TAGTCAAGAC TTAGAAATCT ATTTAATTCG CTACAATGCA 2700
AAACATGAAA CAGTAAATGT GCCAGGTACG GGTTCCTTAT GGCCGCTTTC
AGCCCAAAGT CCAATCGGAA AGTGTGGAGA GCCGAATCGA TGCGCGCCAC 2800
ACCTTGAATG GAATCCTGAC TTAGATTGTT CGTGTAGGGA TGGAGAAAAG
TGTGCCCATC ATTCGCATCA TTTCTCCTTA GACATTGATG TAGGATGTAC 2900
AGACTTAAAT GAGGACCTAG GTGTATGGGT GATCTTTAAG ATTAAGACGC
AAGATGGGCA CGCAAGACTA GGGAATCTAG AGTTTCTCGA AGAGAAACCA 3000
TTAGTAGGAG AAGCGCTAGC TCGTGTGAAA AGAGCGGAGA AAAAATGGAG
AGACAAACGT GAAAAATTGG AATGGGAAAC AAATATCGTT TATAAAGAGG 3100
CAAAAGAATC TGTAGATGCT TTATTTGTAA ACTCTCAATA TGATCAATTA
CAAGCGGATA CGAATATTGC CATGATTCAT GCGGCAGATA AACGTGTTCA 3200
TAGCATTCGA GAAGCTTATC TGCCTGAGCT GTCTGTGATT CCGGGTGTCA
ATGCGGCTAT TTTTGAAGAA TTAGAAGGGC GTATTTTCAC TGCATTCTCC 3300
CTATATGATG CGAGAAATGT CATTAAAAAT GGTGATTTTA ATAATGGCTT
ATCCTGCTGG AACGTGAAAG GGCATGTAGA TGTAGAAGAA CAAAACAACC 3400
AACGTTCGGT CCTTGTTGTT CCGGAATGGG AAGCAGAAGT GTCACAAGAA
GTTCGTGTCT GTCCGGGTCG TGGCTATATC CTTCGTGTCA CAGCGTACAA 3500
GGAGGGATAT GGAGAAGGTT GCGTAACCAT TCATGAGATC GAGAACAATA
CAGACGAACT GAAGTTTAGC AACTGCGTAG AAGAGGAAAT CTATCCAAAT 3600
AACACGGTAA CGTGTAATGA TTATACTGTA AATCAAGAAG AATACGGAGG
TGCGTACACT TCTCGTAATC GAGGATATAA CGAAGCTCCT TCCGTACCAG 3700
CTGATTATGC GTCAGTCTAT GAAGAAAAAT CGTATACAGA TGGACGAAGA
GAGAATCCTT GTGAATTTAA CAGAGGGTAT AGGGATTACA CGCCACTACC 3800
AGTTGGTTAT GTGACAAAAG AATTAGAATA CTTCCCAGAA ACCGATAAGG
TATGGATTGA GATTGGAGAA ACGGAAGGAA CATTTATCGT GGACAGCGTG 3900
GAATTACTCC TTATGGAGGA A (end HD-73)
```

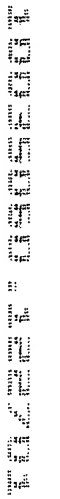
and equivalent nucleotide sequences coding for toxin EW4 with the following amino acid sequence:

```
M D N N P N I N E C I P Y N C L S N P E V E V L G G E R I E
T G Y T P I D I S L S L T Q F L L S E F V P G A G F V L G L
V D I I W G I F G P S Q W D A F P V Q I E Q L I N Q R I E E
F A R N Q A I S R L E G L S N L Y Q I Y A E S F R E W E A D
P T N P A L R E E M R I Q F N D M N S A L T T A I P L L A V
Q N Y Q V P L L S V Y V Q A A N L H L S V L R D V S V F G Q
R W G F D A A T I N S R Y N D L T R L I G N Y T D Y A V R W
Y N T G L E R V W G P D S R D W V R Y N Q F R R E L T L T V
L D I V A L F S N Y D S R R Y P I R T V S Q L T R E I Y T N
P V L E N F D G S F R G M A Q R I E Q N I R Q P H L M D I L
N S I T I Y T D V H R G F N Y W S G H Q I T A S P V G F S G
P E F A F P L F G N A G N A A P P V L V S L T G L G I F R T
```

```
62  L S S P L Y R R I I L G S G P N N Q E L F V L D G T E F S F
    A S L T T N L P S T I Y R Q R G T V D S L D V I P P Q D N S
63  V P P R A G F S H R L S H V T M L S Q A A G A V Y T L R A Q
64  R P M F S W I H R S A E F N N I I A S D S I T Q I P A V K G
    N F L F N G S V I S G P G F T G G D L V R L N S S G N N I Q
65  N R G Y I E V P I H F P S T S T R Y R V R V R Y A S V T P I
66  H L N V N W G N S S I F S N T V P A T A T S L D N L Q S S D
    F G Y F E S A N A F T S S L G N I V G V R N F S G T A G V I
67  I D R F E F I P V T A T L E A E Y N L E R A Q K A V N A L F
68  T S T N Q L G L K T N V T D Y H I D Q V S N L V T Y L S D E
    F C L D E K R E L S E K V K H A K R L S D E R N L L Q D S N
69  F K D I N R Q P E R G W G G S T G I T I Q G G D D V F K E N
70  Y V T L S G T F D E C Y P T Y L Y Q K I D E S K L K A F T R
    Y Q L R G Y I E D S Q D L E I Y L I R Y N A K H E T V N V P
71  G T G S L W P L S A Q S P I G K C G E P N R C A P H L E W N
72  P D L D C S C R D G E K C A H H S H H F S L D I D V G C T D
    L N E D L G V W V I F K I K T Q D G H A R L G N L E F L E E
73  K P L V G E A L A R V K R A E K K W R D K R E K L E W E T N
74  I V Y K E A K E S V D A L F V N S Q Y D Q L Q A D T N I A M
    I H A A D K R V H S I R E A Y L P E L S V I P G V N A A I F
75  E E L E G R I F T A F S L Y D A R N V I K N G D F N N G L S
76  C W N V K G H V D V E E Q N N Q R S V L V V P E W E A E V S
    Q E V R V C P G R G Y I L R V T A Y K E G Y G E G C V T I H
77  E I E N N T D E L K F S N C V E E E I Y P N N T V T C N D Y
78  T V N Q E E Y G G A Y T S R N R G Y N E A P S V P A D Y A S
    V Y E E K S Y T D G R R E N P C E F N R G Y R D Y T P L P V
89  G Y V T K E L E Y F P E T D K V W I E I G E T E G T F I V D
80  S V E L L L M E E.
```

23. A pesticidal composition, according to claim 12, wherein said gene, denoted pACB-1, encoding a chimeric toxin, is as follows:

```
4                (start HD-73)              ATG GATAACAATC 400
5   CGAACATCAA TGAATGCATT CCTTATAATT GTTTAAGTAA CCCTGAAGTA
6   GAAGTATTAG GTGGAGAAAG AATAGAAACT GGTTACACCC CAATCGATAT 500
7   TTCCTTGTCG CTAACGCAAT TTCTTTTGAG TGAATTTGTT CCCGGTGCTG
8   GATTTGTGTT AGGACTAGTT GATATAATAT GGGGAATTTT TGGTCCCTCT 600
9   CAATGGGACG CATTTCTTGT ACAAATTGAA CAGTTAATTA ACCAAAGAAT
10  AGAAGAATTC GCTAGGAACC AAGCCATTTC TAGATTAGAA GGACTAAGCA 700
11  ATCTTTATCA AATTTACGCA GAATCTTTTA GAGAGTGGGA AGCAGATCCT
12  ACTAATCCAG CATTAAGAGA AGAGATGCGT ATTCAATTCA ATGACATGAA 800
13  CAGTGCCCTT ACAACCGCTA TTCCTCTTTT TGCAGTTCAA AATTATCAAG
14  TTCCTCTTTT ATCAGTATAT GTTCAAGCTG CAAATTTACA TTTATCAGTT 900
15  TTGAGAGATG TTTCAGTGTT TGGACAAAGG TGGGGATTTG ATGCCGCGAC
```



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16      TATCAATAGT CGTTATAATG ATTTAACTAG GCTTATTGGC AACTATACAG 1000
17      ATTATGCTGT ACGCTGGTAC AATACGGGAT TAGAACGTGT ATGGGGACCG
18      GATTCTAGAG ATTGGGTAAG GTATAATCAA TTTAGAAGAG AATTAACACT 1100
19      AACTGTATTA GATATCGTTG CTCTGTTCCC GAATTATGAT AGTAGAAGAT
20      ATCCAATTCG AACAGTTTCC CAATTAACAA GAGAAATTTA TACAAACCCA 1200
21      GTATTAGAAA ATTTTGATGG TAGTTTTCGA GGCTCGGCTC AGGGCATAGA
22      AAGAAGTATT AGGAGTCCAC ATTTGATGGA TATACTTAAC AGTATAACCA 1300
23      TCTATACGGA TGCTCATAGG GGTTATTATT ATTGGTCAGG GCATCAAATA
24      ATGGCTTCTC CTGTAGGGTT TTCGGGGCCA GAATTCACTT TTCCGCTATA 1400
25      TGGAACTATG GGAAATGCAG CTCCACAACA ACGTATTGTT GCTCAACTAG
26      GTCAGGGCGT GTATAGAACA TTATCGTCCA CTTTATATAG AAGACCTTTT 1500
27      AATATAGGGA TAAATAATCA ACAACTATCT GTTCTTGACG GGACAGAATT
28      TGCTTATGGA ACCTCCTCAA ATTTGCCATC CGCTGTATAC AGAAAAAGCG 1600
29      GAACGGTAGA TTCGCTGAAT GAAATACCGC CACAGAATAA CAACGTGCCA
30      CCTAGGCAAG AATTTAGTCA TCGATTAAGC CATGTTTCAA TGTTTCGTTC 1700
31      AGGCTTTAGT AATAGTAGTG TAAGTATAAT AAGAGCT (end hd-73)
32          (start HD-1)          CCAACGT TTTCTTGGCA GCATCGCAGT 1900
33      GCTGAATTTA ATAATATAAT TCCTTCATCA CAAATTACAC AAATACCTTT
34      AACAAAATCT ACTAATCTTG GCTCTGGAAC TTCTGTCGTT AAAGGACCAG 2000
35      GATTTACAGG AGGAGATATT CTTCGAAGAA CTTCACCTGG CCAGATTTCA
36      ACCTTAAGAG TAAATATTAC TGCACCATTA TCACAAAGAT ATCGGGTAAG 2100
37      AATTCGCTAC GCTTCTACTA CAAATTTACA ATTCCATACA TCAATTGACG
38      GAAGACCTAT TAATCAGGGT AATTTTTCAG CAACTATGAG TAGTGGGAGT 2200
39      AATTTACAGT CCGGAAGCTT TAGGACTGTA GGTTTTACTA CTCCGTTTAA
40      CTTTTCAAAT GGATCAAGTG TATTTACGTT AAGTGCTCAT GTCTTCAATT 2300
41      CAGGCAATGA AGTTTATATA GATCGAATTG AATTTGTTCC GGCAGAAGTA
42      ACCTTTGAGG CAGAATATGA TTTAGAAAGA GCACAAAAGG CGGTGAATGA 2400
43      GCTGTTTACT TCTTCCAATC AAATCGGGTT AAAAACAGAT GTGACGGATT
44      ATCATATTGA TCAAGTATCC AATTTAGTTG AGTGTTTATC AGATGAATTT 2500
45      TGTCTGGATG AAAAACAAGA ATTGTCCGAG AAAGTCAAAC ATGCGAAGCG
46      ACTTAGTGAT GAGCGGAATT TACTTCAAGA TCCAAACTTC AGAGGGATCA 2600
47      ATAGACAACT AGACCGTGGC TGGAGAGGAA GTACGGATAT TACCATCCAA
48      GGAGGCGATG ACGTATTCAA AGAGAATTAC GTTACGCTAT TGGGTACCTT 2700
49      TGATGAGTGC TATCCAACGT ATTTATATCA AAAAATAGAT GAGTCGAAAT
50      TAAAAGCCTA TACCCGTTAT CAATTAAGAG GGTATATCGA AGATAGTCAA 2800
51      GACTTAGAAA TCTATTTAAT TCGCTACAAT GCAAAACATG AAACAGTAAA
52      TGTGCCAGGT ACGGGTTCCT TATGGCCGCT TTCAGCCCAA AGTCCAATCG 2900
53      GAAAGTGTGG AGAGCCGAAT CGATGCGCGC CACACCTTGA ATGGAATCCT
54      GACTTAGATT GTTCGTGTAG GGATGGAGAA AAGTGTGCCC ATCATTCGCA 3000
55      TCATTTCTCC TTAGACATTG ATGTAGGATG TACAGACTTA AATGAGGACC
56      TAGGTGTATG GGTGATCTTT AAGATTAAGA CGCAAGATGG GCACGCAAGA 3100
57      CTAGGGAATC TAGAGTTTCT CGAAGAGAAA CCATTAGTAG GAGAAGCGCT
58      AGCTCGTGTG AAAAGAGCGG AGAAAAAATG GAGAGACAAA CGTGAAAAAT 3200
59      TGGAATGGGA AACAAATATC GTTTATAAAG AGGCAAAAGA ATCTGTAGAT
60      GCTTTATTTG TAAACTCTCA ATATGATCAA TTACAAGCGG ATACGAATAT 3300
61      TGCCATGATT CATGCGGCAG ATAAACGTGT TCATAGCATT CGAGAAGCTT
62      ATCTGCCTGA GCTGTCTGTG ATTCCGGGTG TCAATGCGGC TATTTTTGAA 3400
63      GAATTAGAAG GGCGTATTTT CACTGCATTC TCCCTATATG ATGCGAGAAA
64      TGTCATTAAA AATGGTGATT TTAATAATGG CTTATCCTGC TGGAACGTGA 3500
65      AAGGGCATGT AGATGTAGAA GAACAAAACA ACCAACGTTC GGTCCTTGTT
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66      CTTCCGGAAT GGGAAGCAGA AGTGTCACAA GAAGTTCGTG TCTGTCCGGG 3600
67      TCGTGGCTAT ATCCTTCGTG TCACAGCGTA CAAGGAGGGA TATGGAGAAG
68      GTTGCGTAAC CATTCATGAG ATCGAGAACA ATACAGACGA ACTGAAGTTT 3700
69      AGCAACTGCG TAGAAGAGGA AATCTATCCA AATAACACGG TAACGTGTAA
70      TGATTATACT GTAAATCAAG AAGAATACGG AGGTGCGTAC ACTTCTCGTA 3800
71      ATCGAGGATA TAACGAAGCT CCTTCCGTAC CAGCTGATTA TGCGTCAGTC
72      TATGAAGAAA AATCGTATAC AGATGGACGA AGAGAGAATC CTTGTGAATT 3900
73      TAACAGAGGG TATAGGGATT ACACGCCACT ACCAGTTGGT TATGTGACAA
74      AAGAATTAGA ATACTTCCCA GAAACCGATA AGGTATGGAT TGAGATTGGA 4000
75      GAAACGGAAG GAACATTTAT CGTGGACAGC GTGGAATTAC TCCTTATGGA
76      GGAA (end HD-1)
```

77 and equivalent nucleotide sequences coding for toxin
78 ACB-1 with the following amino acid sequence:

```
79      M D N N P N I N E C I P Y N C L S N P E V E V L G G E R I E
80      T G Y T P I D I S L S L T Q F L L S E F V P G A G F V L G L
81      V D I I W G I F G P S Q W D A F L V Q I E Q L I N Q R I E E
82      F A R N Q A I S R L E G L S N L Y Q I Y A E S F R E W E A D
83      P T N P A L R E E M R I Q F N D M N S A L T T A I P L F A V
84      Q N Y Q V P L L S V Y V Q A A N L H L S V L R D V S V F G Q
85      R W G F D A A T I N S R Y N D L T R L I G N Y T D Y A V R W
86      Y N T G L E R V W G P D S R D W V R Y N Q F R R E L T L T V
87      L D I V A L F P N Y D S R R Y P I R T V S Q L T R E I Y T N
88      P V L E N F D G S F R G S A Q G I E R S I R S P H L M D I L
89      N S I T I Y T D A H R G Y Y Y W S G H Q I M A S P V G F S G
90      P E F T F P L Y G T M G N A A P Q Q R I V A Q L G Q G V Y R
91      T L S S T L Y R R P F N I G I N N Q Q L S V L D G T E F A Y
92      G T S S N L P S A V Y R K S G T V D S L N E I P P Q N N N V
93      P P R Q E F S H R L S H V S M F R S G F S N S S V S I I R A
94      P T F S W Q H R S A E F N N I I P S S Q I T Q I P L T K S T
95      N L G S G T S V V K G P G F T G G D I L R R T S P G Q I S T
96      L R V N I T A P L S Q R Y R V R I R Y A S T T N L Q F H T S
97      I D G R P I N Q G N F S A T M S S G S N L Q S G S F R T V G
98      F T T P F N F S N G S S V F T L S A H V F N S G N E V Y I D
99      R I E F V P A E V T F E A E Y D L E R A Q K A V N E L F T S
100     S N Q I G L K T D V T D Y H I D Q V S N L V E C L S D E F C
101     L D E K K E L S E K V K H A K R L S D E R N L L Q D P N F R
102     G I N R Q L D R G W R G S T D I T I Q G G D D V F K E N Y V
103     T L L G T F D E C Y P T Y L Y Q K I D E S K L K A Y T R Y Q
104     L R G Y I E D S Q D L E I Y L I R Y N A K H E T V N V P G T
105     G S L W P L S A Q S P I G K C G E P N R C A P H L E W N P D
106     L D C S C R D G E K C A H H S H H F S L D I D V G C T D L N
107     E D L G V W V I F K I K T Q D G H A R L G N L E F L E E K P
108     L V G E A L A R V K R A E K K W R D K R E K L E W E T N I V
109     Y K E A K E S V D A L F V N S Q Y D Q L Q A D T N I A M I H
110     A A D K R V H S I R E A Y L P E L S V I P G V N A A I F E E
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111  L E G R I F T A F S L Y D A R N V I K N G D F N N G L S C W
112  N V K G H V D V E E Q N N Q R S V L V L P E W E A E V S Q E
113  V R V C P G R G Y I L R V T A Y K E G Y G E G C V T I H E I
114  E N N T D E L K F S N C V E E E I Y P N N T V T C N D Y T V
115  N Q E E Y G G A Y T S R N R G Y N E A P S V P A D Y A S V Y
116  E E K S Y T D G R R E N P C E F N R G Y R D Y T P L P V G Y
117  V T K E L E Y F P E T D K V W I E I G E T E G T F I V D S V
118  E L L L M E E.
```

1 24. A pesticidal composition, according to
2 claim 12, wherein said gene, denoted pSYW1, encoding
3 a chimeric toxin, is as follows:

```
4                (start HD-73)                ATG GATAACAATC 400
5  CGAACATCAA TGAATGCATT CCTTATAATT GTTTAAGTAA CCCTGAAGTA
6  GAAGTATTAG GTGGAGAAAG AATAGAAACT GGTTACACCC CAATCGATAT 500
7  TTCCTTGTCG CTAACGCAAT TTCTTTTGAG TGAATTTGTT CCCGGTGCTG
8  GATTTGTGTT AGGACTAGTT GATATAATAT GGGGAATTTT TGGTCCCTCT 600
9  CAATGGGACG CATTTCTTGT ACAAATTGAA CAGTTAATTA ACCAAAGAAT
10 AGAAGAATTC GCTAGGAACC AAGCCATTTC TAGATTAGAA GGACTAAGCA 700
11 ATCTTTATCA AATTTACGCA GAATCTTTTA GAGAGTGGGA AGCAGATCCT
12 ACTAATCCAG CATTAAGAGA AGAGATGCGT ATTCAATTCA ATGACATGAA 800
13 CAGTGCCCTT ACAACCGCTA TTCCTCTTTT TGCAGTTCAA AATTATCAAG
14 TTCCTCTTTT ATCAGTATAT GTTCAAGCTG CAAATTTACA TTTATCAGTT 900
15 TTGAGAGATG TTTCAGTGTT TGGACAAAGG TGGGGATTTG ATGCCGCGAC
16 TATCAATAGT CGTTATAATG ATTTAACTAG GCTTATTGGC AACTATACAG 1000
17 ATTATGCTGT ACGCTGGTAC AATACGGGAT TAGAACGTGT ATGGGGACCG
18 GATTCTAGAG ATTGGGTAAG GTATAATCAA TTTAGAAGAG AATTAACACT 1100
19 AACTGTATTA GATATCGTTG CTCTGTTCCC GAATTATGAT AGTAGAAGAT
20 ATCCAATTCG AACAGTTTCC CAATTAACAA GAGAAATTTA TACAAACCCA 1200
21 GTATTAGAAA ATTTTGATGG TAGTTTTCGA GGCTCGGCTC AGGGCATAGA
22 AGGAAGTATT AGGAGTCCAC ATTTGATGGA TATACTTAAC AGTATAACCA 1300
23 TCTATACGGA TGCTCATAAA GGGGAATATT ATTGGTCAGG GCATCAAATA
24 ATGGCTTCTC CTGTAGGGTT TTCGGGGCCA GAATTCACTT TTCCGCTATA 1400
25 TGGAACTATG GGAAATGCAG CTCCACAACA ACGTATTGTT GCTCAACTAG
26 GTCAGGGCGT GTATAGAACA TTATCGTCCA CTTTATATAG AAGACCTTTT 1500
27 AATATAGGGA TAAATAATCA ACAACTATCT GTTCTTGACG GGACAGAATT
28 TGCTTATGGA ACCTCCTCAA ATTTGCCATC CGCTGTATAC AGAAAAAGCG 1600
29 GAACGGTAGA TTCGCTGGAT GAAATACCGC CACAGAATAA CAACGTGCCA
30 CCTAGGCAAG GATTTAGTCA TCGATTAAGC CATGTTTCAA TGTTTCGTTC 1700
31 AGGCTTTAGT AATAGTAGTG TAAGTATAAT AAGAGCT (end hd-73)
32     (start HD-1)          CCAACGT TTTCTTGGCA GCATCGCAGT 1900
33 GCTGAATTTA ATAATATAAT TCCTTCATCA CAAATTACAC AAATACCTTT
34 AACAAAATCT ACTAATCTTG GCTCTGGAAC TTCTGTCGTT AAAGGACCAG 2000
35 GATTTACAGG AGGAGATATT CTTCGAAGAA CTTCACCTGG CCAGATTTCA
36 ACCTTAAGAG TAAATATTAC TGCACCATTA TCACAAAGAT ATCGGGTAAG 2100
37 AATTCGCTAC GCTTCTACTA CAAATTTACA ATTCCATACA TCAATTGACG
38 GAAGACCTAT TAATCAGGGT AATTTTTCAG CAACTATGAG TAGTGGGAGT 2200
49 AATTTACAGT CCGGAAGCTT TAGGACTGTA GGTTTTACTA CTCCGTTTAA
40 CTTTTCAAAT GGATCAAGTG TATTTACGTT AAGTGCTCAT GTCTTCAATT 2300
41 CAGGCAATGA AGTTTATATA GATCGAATTG AATTTGTTCC GGCAGAAGTA
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42      ACCTTTGAGG CAGAATATGA TTTAGAAAGA GCACAAAAGG CGGTGAATGA 2400
43      GCTGTTTACT TCTTCCAATC AAATCGGGTT AAAAACAGAT GTGACGGATT
44      ATCATATTGA TCAAGTATCC AATTTAGTTG AGTGTTTATC AGATGAATTT 2500
45      TGTCTGGATG AAAAACAAGA ATTGTCCGAG AAAGTCAAAC ATGCGAAGCG
46      ACTTAGTGAT GAGCGGAATT TACTTCAAGA TCCAAACTTC AGAGGGATCA 2600
47      ATAGACAACT AGACCGTGGC TGGAGAGGAA GTACGGATAT TACCATCCAA
48      GGAGGCGATG ACGTATTCAA AGAGAATTAC GTTACGCTAT TGGGTACCTT 2700
49      TGATGAGTGC TATCCAACGT ATTTATATCA AAAAATAGAT GAGTCGAAAT
50      TAAAAGCCTA TACCCGTTAT CAATTAAGAG GGTATATCGA AGATAGTCAA 2800
51      GACTTAGAAA TCTATTTAAT TCGCTACAAT GCAAAACATG AAACAGTAAA
52      TGTGCCAGGT ACGGGTTCCT TATGGCCGCT TTCAGCCCAA AGTCCAATCG 2900
53      GAAAGTGTGG AGAGCCGAAT CGATGCGCGC CACACCTTGA ATGGAATCCT
54      GACTTAGATT GTTCGTGTAG GGATGGAGAA AAGTGTGCCC ATCATTCGCA 3000
55      TCATTTCTCC TTAGACATTG ATGTAGGATG TACAGACTTA AATGAGGACC
56      TAGGTGTATG GGTGATCTTT AAGATTAAGA CGCAAGATGG GCACGCAAGA 3100
57      CTAGGGAATC TAGAGTTTCT CGAAGAGAAA CCATTAGTAG GAGAAGCGCT
58      AGCTCGTGTG AAAAGAGCGG AGAAAAAATG GAGAGACAAA CGTGAAAAAT 3200
59      TGGAATGGGA AACAAATATC GTTTATAAAG AGGCAAAAGA ATCTGTAGAT
60      GCTTTATTTG TAAACTCTCA ATATGATCAA TTACAAGCGG ATACGAATAT 3300
61      TGCCATGATT CATGCGGCAG ATAAACGTGT TCATAGCATT CGAGAAGCTT
62      ATCTGCCTGA GCTGTCTGTG ATTCCGGGTG TCAATGCGGC TATTTTTGAA 3400
63      GAATTAGAAG GGCGTATTTT CACTGCATTC TCCCTATATG ATGCGAGAAA
64      TGTCATTAAA AATGGTGATT TTAATAATGG CTTATCCTGC TGGAACGTGA 3500
65      AAGGGCATGT AGATGTAGAA GAACAAAACA ACCAACGTTC GGTCCTTGTT
66      CTTCCGGAAT GGGAAGCAGA AGTGTCACAA GAAGTTCGTG TCTGTCCGGG 3600
67      TCGTGGCTAT ATCCTTCGTG TCACAGCGTA CAAGGAGGGA TATGGAGAAG
68      GTTGCGTAAC CATTCATGAG ATCGAGAACA ATACAGACGA ACTGAAGTTT 3700
68      AGCAACTGCG TAGAAGAGGA AATCTATCCA AATAACACGG TAACGTGTAA
70      TGATTATACT GTAAATCAAG AAGAATACGG AGGTGCGTAC ACTTCTCGTA 3800
71      ATCGAGGATA TAACGAAGCT CCTTCCGTAC CAGCTGATTA TGCGTCAGTC
72      TATGAAGAAA AATCGTATAC AGATGGACGA AGAGAGAATC CTTGTGAATT 3900
73      TAACAGAGGG TATAGGGATT ACACGCCACT ACCAGTTGGT TATGTGACAA
74      AAGAATTAGA ATACTTCCCA GAAACCGATA AGGTATGGAT TGAGATTGGA 4000
75      GAAACGGAAG GAACATTTAT CGTGGACAGC GTGGAATTAC TCCTTATGGA
76      GGAA (end HD-1)
```

77 and equivalent nucleotide sequences coding for toxin
78 SYW1 with the following amino acid sequence:

```
79      M D N N P N I N E C I P Y N C L S N P E V E V L G G E R I E
80      T G Y T P I D I S L S L T Q F L L S E F V P G A G F V L G L
81      V D I I W G I F G P S Q W D A F L V Q I E Q L I N Q R I E E
82      F A R N Q A I S R L E G L S N L Y Q I Y A E S F R E W E A D
83      P T N P A L R E E M R I Q F N D M N S A L T T A I P L F A V
84      Q N Y Q V P L L S V Y V Q A A N L H L S V L R D V S V F G Q
85      R W G F D A A T I N S R Y N D L T R L I G N Y T D Y A V R W
86      Y N T G L E R V W G P D S R D W V R Y N Q F R R E L T L T V
87      L D I V A L F P N Y D S R R Y P I R T V S Q L T R E I Y T N
88      P V L E N F D G S F R G S A Q G I E G S I R S P H L M D I L
89      N S I T I Y T D A H K G E Y Y W S G H Q I M A S P V G F S G
90      P E F T F P L Y G T M G N A A P Q Q R I V A Q L G Q G V Y R
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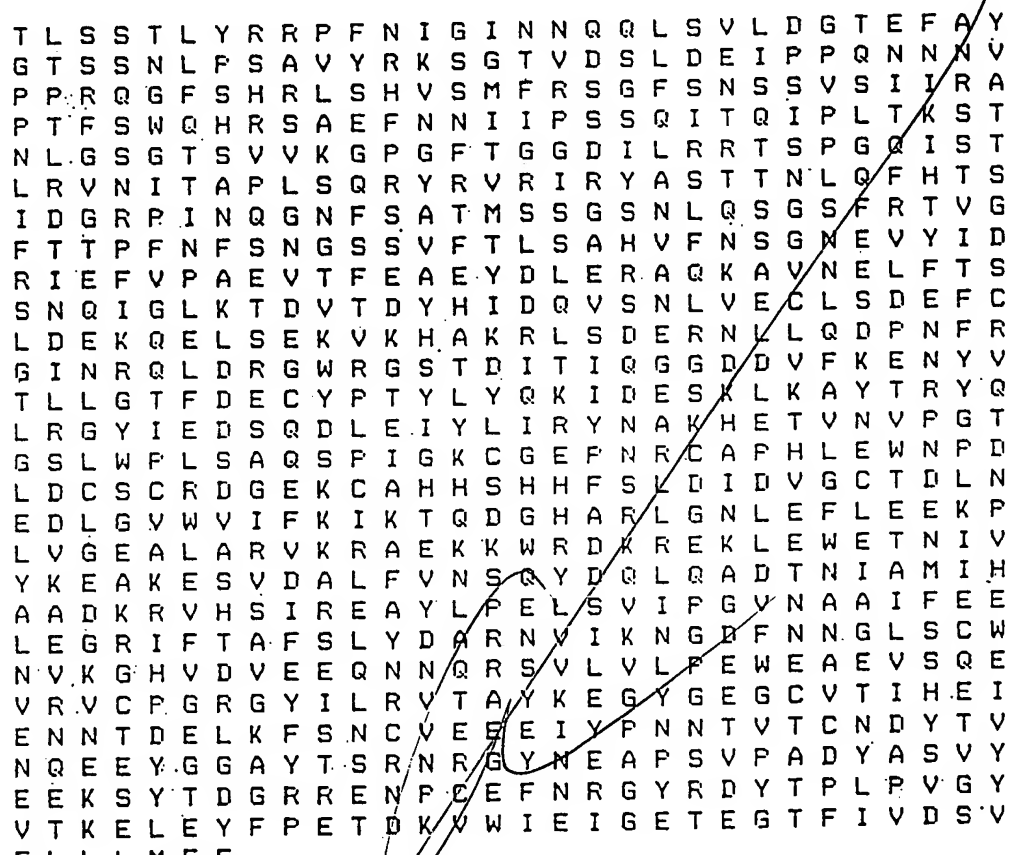

25. A recombinant DNA transfer vector comprising DNA having the following nucleotide sequence or equivalent nucleotide sequences containing bases whose translated region codes for the same amino acid sequence:

```
                (start HD-73)                ATG GATAACAATC 400
CGAACATCAA TGAATGCATT CCTTATAATT GTTTAAGTAA CCCTGAAGTA
GAAGTATTAG GTGGAGAAAG AATAGAAACT GGTTACACCC CAATCGATAT 500
TTCCTTGTCG CTAACGCAAT TTCTTTTGAG TGAATTTGTT CCCGGTGCTG
GATTTGTGTT AGGACTAGTT GATATAATAT GGGGAATTTT TGGTCCCTCT 600
CAATGGGACG CATTTCTTGT ACAAATTGAA CAGTTAATTA ACCAAAGAAT
AGAAGAATTC GCTAGGAACC AAGCCATTTC TAGATTAGAA GGACTAAGCA 700
ATCTTTATCA AATTTACGCA GAATCTTTTA GAGAGTGGGA AGCAGATCCT
ACTAATCCAG CATTAAGAGA AGAGATGCGT ATTCAATTCA ATGACATGAA 800
CAGTGCCCTT ACAACCGCTA TTCCTCTTTT TGCAGTTCAA AATTATCAAG
TTCCTCTTTT ATCAGTATAT GTTCAAGCTG CAAATTTACA TTTATCAGTT 900
TTGAGAGATG TTTCAGTGTT TGGACAAAGG TGGGGATTTG ATGCCGCGAC
TATCAATAGT CGTTATAATG ATTTAACTAG GCTTATTGGC AACTATACAG 1000
ATTATGCTGT ACGCTGGTAC AATACGGGAT TAGAACGTGT ATGGGGACCG
GATTCTAGAG ATTGGGTAAG GTATAATCAA TTTAGAAGAG AATTAACACT 1100
AACTGTATTA GATATCGTTG CTCTGTTCCC GAATTATGAT AGTAGAAGAT
ATCCAATTCG AACAGTTTCC CAATTAACAA GAGAAATTTA TACAAACCCA 1200
GTATTAGAAA ATTTTGATGG TAGTTTTCGA GGCTCGGCTC AGGGCATAGA
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M12C1FDF3D2

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23  AAGAAGTATT AGGAGTCCAC ATTTGATGGA TATACTTAAC AGTATAACCA 1300
24  TCTATACGGA TGCTCATAGG GGTTATTATT ATTGGTCAGG GCATCAAATA
25  ATGGCTTCTC CTGTAGGGTT TTCGGGGCCA GAATTCACTT TTCCGCTATA 1400
26  TGGAACTATG GGAAATGCAG CTCCACAACA ACGTATTGTT GCTCAACTAG
27  GTCAGGGCGT GTATAGAACA TTATCGTCCA CTTTATATAG AAGACCTTTT 1500
28  AATATAGGGA TAAATAATCA ACAACTATCT GTTCTTGACG GGACAGAATT
29  TGCTTATGGA ACCTCCTCAA ATTTGCCATC CGCTGTATAC AGAAAAAGCG 1600
30  GAACGGTAGA TTCGCTGGAT GAAATACCGC CACAGAATAA CAACGTGCCA
31  CCTAGGCAAG GATTTAGTCA TCGATTAAGC CATGTTTCAA TGTTTCGTTC 1700
32  AGGCTTTAGT AATAGTAGTG TAAGTATAAT AAGAGCT (end hd-73)
33      (start HD-1)          CCAACGT TTTCTTGGCA GCATCGCAGT 1900
34  GCTGAATTTA ATAATATAAT TCCTTCATCA CAAATTACAC AAATACCTTT
35  AACAAAATCT ACTAATCTTG GCTCTGGAAC TTCTGTCGTT AAAGGACCAG 2000
36  GATTTACAGG AGGAGATATT CTTCGAAGAA CTTCACCTGG CCAGATTTCA
37  ACCTTAAGAG TAAATATTAC TGCACCATTA TCACAAAGAT ATCGGGTAAG 2100
38  AATTCGCTAC GCTTCTACTA CAAATTTACA ATTCCATACA TCAATTGACG
39  GAAGACCTAT TAATCAGGGT AATTTTTCAG CAACTATGAG TAGTGGGAGT 2200
40  AATTTACAGT CCGGAAGCTT TAGGACTGTA GGTTTTACTA CTCCGTTTAA
41  CTTTTCAAAT GGATCAAGTG TATTTACGTT AAGTGCTCAT GTCTTCAATT 2300
42  CAGGCAATGA AGTTTATATA GATCGAATTG AATTTGTTCC GGCAGAAGTA
43  ACCTTTGAGG CAGAATATGA TTTAGAAAGA GCACAAAAGG CGGTGAATGA 2400
44  GCTGTTTACT TCTTCCAATC AAATCGGGTT AAAAACAGAT GTGACGGATT
45  ATCATATTGA TCAAGTATCC AATTTAGTTG AGTGTTTATC AGATGAATTT 2500
46  TGTCTGGATG AAAAACAAGA ATTGTCCGAG AAAGTCAAAC ATGCGAAGCG
47  ACTTAGTGAT GAGCGGAATT TACTTCAAGA TCCAAACTTC AGAGGGATCA 2600
48  ATAGACAACT AGACCGTGGC TGGAGAGGAA GTACGGATAT TACCATCCAA
49  GGAGGCGATG ACGTATTCAA AGAGAATTAC GTTACGCTAT TGGGTACCTT 2700
50  TGATGAGTGC TATCCAACGT ATTTATATCA AAAAATAGAT GAGTCGAAAT
51  TAAAAGCCTA TACCCGTTAT CAATTAAGAG GGTATATCGA AGATAGTCAA 2800
52  GACTTAGAAA TCTATTTAAT TCGCTACAAT GCAAAACATG AAACAGTAAA
53  TGTGCCAGGT ACGGGTTCCT TATGGCCGCT TTCAGCCCAA AGTCCAATCG 2900
54  GAAAGTGTGG AGAGCCGAAT CGATGCGCGC CACACCTTGA ATGGAATCCT
55  GACTTAGATT GTTCGTGTAG GGATGGAGAA AAGTGTGCCC ATCATTCGCA 3000
56  TCATTTCTCC TTAGACATTG ATGTAGGATG TACAGACTTA AATGAGGACC
57  TAGGTGTATG GGTGATCTTT AAGATTAAGA CGCAAGATGG GCACGCAAGA 3100
58  CTAGGGAATC TAGAGTTTCT CGAAGAGAAA CCATTAGTAG GAGAAGCGCT
59  AGCTCGTGTG AAAAGAGCGG AGAAAAAATG GAGAGACAAA CGTGAAAAAT 3200
60  TGGAATGGGA AACAAATATC GTTTATAAAG AGGCAAAAGA ATCTGTAGAT
61  GCTTTATTTG TAAACTCTCA ATATGATCAA TTACAAGCGG ATACGAATAT 3300
62  TGCCATGATT CATGCGGCAG ATAAACGTGT TCATAGCATT CGAGAAGCTT
63  ATCTGCCTGA GCTGTCTGTG ATTCCGGGTG TCAATGCGGC TATTTTTGAA 3400
64  GAATTAGAAG GGCGTATTTT CACTGCATTC TCCCTATATG ATGCGAGAAA
65  TGTCATTAAA AATGGTGATT TTAATAATGG CTTATCCTGC TGGAACGTGA 3500
66  AAGGGCATGT AGATGTAGAA GAACAAAACA ACCAACGTTC GGTCCTTGTT
67  CTTCCGGAAT GGGAAGCAGA AGTGTCACAA GAAGTTCGTG TCTGTCCGGG 3600
68  TCGTGGCTAT ATCCTTCGTG TCACAGCGTA CAAGGAGGGA TATGGAGAAG
69  GTTGCGTAAC CATTCATGAG ATCGAGAACA ATACAGACGA ACTGAAGTTT 3700
70  AGCAACTGCG TAGAAGAGGA AATCTATCCA AATAACACGG TAACGTGTAA
71  TGATTATACT GTAAATCAAG AAGAATACGG AGGTGCGTAC ACTTCTCGTA 3800
72  ATCGAGGATA TAACGAAGCT CCTTCCGTAC CAGCTGATTA TGCGTCAGTC
73  TATGAAGAAA AATCGTATAC AGATGGACGA AGAGAGAATC CTTGTGAATT 3900
74  TAACAGAGGG TATAGGGATT ACACGCCACT ACCAGTTGGT TATGTGACAA
75  AAGAATTAGA ATACTTCCCA GAAACCGATA AGGTATGGAT TGAGATTGGA 4000
76  GAAACGGAAG GAACATTTAT CGTGGACAGC GTGGAATTAC TCCTTATGGA
77  GGAA (end HD-1).
```

26. A recombinant DNA transfer vector comprising DNA having the following nucleotide sequence or equivalent nucleotide sequences containing bases whose translated region codes for the same amino acid sequence:

```
      (start HD-1)          ATGG ATAACAATCC GAACATCAAT
GAATGCATTC CTTATAATTG TTTAAGTAAC CCTGAAGTAG AAGTATTAGG 600
TGGAGAAAGA ATAGAAACTG GTTACACCCC AATCGATATT TCCTTGTCGC
TAACGCAATT TCTTTTGAGT GAATTTGTTC CCGGTGCTGG ATTTGTGTTA 700
GGACTAGTTG ATATAATATG GGGAATTTTT GGTCCCTCTC AATGGGACGC
ATTTCCTGTA CAAATTGAAC AGTTAATTAA CCAAAGAATA GAAGAATTCG 800
CTAGGAACCA AGCCATTTCT AGATTAGAAG GACTAAGCAA TCTTTATCAA
ATTTACGCAG AATCTTTTAG AGAGTGGGAA GCAGATCCTA CTAATCCAGC 900
ATTAAGAGAA GAGATGCGTA TTCAATTCAA TGACATGAAC AGTGCCCTTA
CAACCGCTAT TCCTCTTTTG GCAGTTCAAA ATTATCAAGT TCCTCTTTTA 1000
TCAGTATATG TTCAAGCTGC AAATTTACAT TTATCAGTTT TGAGAGATGT
TTCAGTGTTT GGACAAAGGT GGGGATTTGA TGCCGCGACT ATCAATAGTC 1100
GTTATAATGA TTTAACTAGG CTTATTGGCA ACTATACAGA TTATGCTGTG
CGCTGGTACA ATACGGGATT AGAGCGTGTA TGGGGACCGG ATTCTAGAGA 1200
TTGGGTAAGG TATAATCAAT TTAGAAGAGA GCTAACACTT ACTGTATTAG
ATATCGTTGC TCTATTCTCA AATTATGATA GTCGAAGGTA TCCAATTCGA 1300
ACAGTTTCCC AATTAACAAG AGAAATTTAT ACGAACCCAG TATTAGAAAA
TTTTGATGGT AGTTTTCGTG GAATGGCTCA GAGAATAGAA CAGAATATTA 1400
GGCAACCACA TCTTATGGAT ATCCTTAATA GTATAACCAT TTATACTGAT
GTGCATAGAG GCTTTAATTA TTGGTCAGGG CATCAAATAA CAGCTTCTCC 1500
TGTAGGGTTT TCAGGACCAG AATTCGCATT CCCTTTATTT GGGAATGCGG
GGAATGCAGC TCCACCCGTA CTTGTCTCAT TAACTGGTTT GGGGATTTTT 1600
AGAACATTAT CTTCACCTTT ATATAGAAGA ATTATACTTG GTTCAGGCCC
AAATAATCAG GAACTGTTTG TCCTTGATGG AACGGAGTTT TCTTTTGCCT 1700
CCCTAACGAC CAACTTGCCT TCCACTATAT ATAGACAAAG GGGTACAGTC
GATTCACTAG ATGTAATACC GCCACAGGAT AATAGTGTAC CACCTCGTGC 1800
GGGATTTAGC CATCGATTGA GTCATGTTAC AATGCTGAGC CAAGCAGCTG
GAGCAGTTTA CACCTTGAGA GCTCAACGT  (stop HD-1)
                (start HD-73)          CCT ATGTTCTCTT
GGATACATCG TAGTGCTGAA TTTAATAATA TAATTGCATC GGATAGTATT 1800
ACTCAAATCC CTGCAGTGAA GGGAAACTTT CTTTTTAATG GTTCTGTAAT
TTCAGGACCA GGATTTACTG GTGGGGACTT AGTTAGATTA AATAGTAGTG 1900
GAAATAACAT TCAGAATAGA GGGTATATTG AAGTTCCAAT TCACTTCCCA
TCGACATCTA CCAGATATCG AGTTCGTGTA CGGTATGCTT CTGTAACCCC 2000
GATTCACCTC AACGTTAATT GGGGTAATTC ATCCATTTTT TCCAATACAG
TACCAGCTAC AGCTACGTCA TTAGATAATC TACAATCAAG TGATTTTGGT 2100
TATTTTGAAA GTGCCAATGC TTTTACATCT TCATTAGGTA ATATAGTAGG
TGTTAGAAAT TTTAGTGGGA CTGCAGGAGT GATAATAGAC AGATTTGAAT 2200
TTATTCCAGT TACTGCAACA CTCGAGGCTG AATATAATCT GGAAAGAGCG
CAGAAGGCGG TGAATGCGCT GTTTACGTCT ACAAACCAAC TAGGGCTAAA 2300
AACAAATGTA ACGGATTATC ATATTGATCA AGTGTCCAAT TTAGTTACGT
ATTTATCGGA TGAATTTTGT CTGGATGAAA AGCGAGAATT GTCCGAGAAA 2400
GTCAAACATG CGAAGCGACT CAGTGATGAA CGCAATTTAC TCCAAGATTC
AAATTTCAAA GACATTAATA GGCAACCAGA ACGTGGGTGG GGCGGAAGTA 2500
CAGGGATTAC CATCCAAGGA GGGGATGACG TATTTAAAGA AAATTACGTC
ACACTATCAG GTACCTTTGA TGAGTGCTAT CCAACATATT TGTATCAAAA 2600
AATCGATGAA TCAAAATTAA AAGCCTTTAC CCGTTATCAA TTAAGAGGGT
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ATATCGAAGA TAGTCAAGAC TTAGAAATCT ATTTAATTCG CTACAATGCA 2700
AAACATGAAA CAGTAAATGT GCCAGGTACG GGTTCCTTAT GGCCGCTTTC
AGCCCAAAGT CCAATCGGAA AGTGTGGAGA GCCGAATCGA TGCGCGCCAC 2800
ACCTTGAATG GAATCCTGAC TTAGATTGTT CGTGTAGGGA TGGAGAAAAG
TGTGCCCATC ATTCGCATCA TTTCTCCTTA GACATTGATG TAGGATGTAC 2900
AGACTTAAAT GAGGACCTAG GTGTATGGGT GATCTTTAAG ATTAAGACGC
AAGATGGGCA CGCAAGACTA GGGAATCTAG AGTTTCTCGA AGAGAAACCA 3000
TTAGTAGGAG AAGCGCTAGC TCGTGTGAAA AGAGCGGAGA AAAAATGGAG
AGACAAACGT GAAAAATTGG AATGGGAAAC AAATATCGTT TATAAAGAGG 3100
CAAAAGAATC TGTAGATGCT TTATTTGTAA ACTCTCAATA TGATCAATTA
CAAGCGGATA CGAATATTGC CATGATTCAT GCGGCAGATA AACGTGTTCA 3200
TAGCATTCGA GAAGCTTATC TGCCTGAGCT GTCTGTGATT CCGGGTGTCA
ATGCGGCTAT TTTTGAAGAA TTAGAAGGGC GTATTTTCAC TGCATTCTCC 3300
CTATATGATG CGAGAAATGT CATTAAAAAT GGTGATTTTA ATAATGGCTT
ATCCTGCTGG AACGTGAAAG GGCATGTAGA TGTAGAAGAA CAAAACAACC 3400
AACGTTCGGT CCTTGTTGTT CCGGAATGGG AAGCAGAAGT GTCACAAGAA
GTTCGTGTCT GTCCGGGTCG TGGCTATATC CTTCGTGTCA CAGCGTACAA 3500
GGAGGGATAT GGAGAAGGTT GCGTAACCAT TCATGAGATC GAGAACAATA
CAGACGAACT GAAGTTTAGC AACTGCGTAG AAGAGGAAAT CTATCCAAAT 3600
AACACGGTAA CGTGTAATGA TTATACTGTA AATCAAGAAG AATACGGAGG
TGCGTACACT TCTCGTAATC GAGGATATAA CGAAGCTCCT TCCGTACCAG 3700
CTGATTATGC GTCAGTCTAT GAAGAAAAAT CGTATACAGA TGGACGAAGA
GAGAATCCTT GTGAATTTAA CAGAGGGTAT AGGGATTACA CGCCACTACC 3800
AGTTGGTTAT GTGACAAAAG AATTAGAATA CTTCCCAGAA ACCGATAAGG
TATGGATTGA GATTGGAGAA ACGGAAGGAA CATTTATCGT GGACAGCGTG 3900
GAATTACTCC TTATGGAGGA A (end HD-73).

27. A recombinant DNA transfer vector comprising DNA having the following nucleotide sequence or equivalent nucleotide sequences containing bases whose translated region codes for the same amino acid sequence:

(start HD-73) ATG GATAACAATC 400
CGAACATCAA TGAATGCATT CCTTATAATT GTTTAAGTAA CCCTGAAGTA
GAAGTATTAG GTGGAGAAAG AATAGAAACT GGTTACACCC CAATCGATAT 500
TTCCTTGTCG CTAACGCAAT TTCTTTTGAG TGAATTTGTT CCCGGTGCTG
GATTTGTGTT AGGACTAGTT GATATAATAT GGGGAATTTT TGGTCCCTCT 600
CAATGGGACG CATTTCTTGT ACAAATTGAA CAGTTAATTA ACCAAAGAAT
AGAAGAATTC GCTAGGAACC AAGCCATTTC TAGATTAGAA GGACTAAGCA 700
ATCTTTATCA AATTTACGCA GAATCTTTTA GAGAGTGGGA AGCAGATCCT
ACTAATCCAG CATTAAGAGA AGAGATGCGT ATTCAATTCA ATGACATGAA 800
CAGTGCCCTT ACAACCGCTA TTCCTCTTTT TGCAGTTCAA AATTATCAAG
TTCCTCTTTT ATCAGTATAT GTTCAAGCTG CAAATTTACA TTTATCAGTT 900
TTGAGAGATG TTTCAGTGTT TGGACAAAGG TGGGGATTTG ATGCCGCGAC
TATCAATAGT CGTTATAATG ATTTAACTAG GCTTATTGGC AACTATACAG 1000
ATTATGCTGT ACGCTGGTAC AATACGGGAT TAGAACGTGT ATGGGGACCG
GATTCTAGAG ATTGGGTAAG GTATAATCAA TTTAGAAGAG AATTAACACT 1100
AACTGTATTA GATATCGTTG CTCTGTTCCC GAATTATGAT AGTAGAAGAT

ATCCAATTCG AACAGTTTCC CAATTAACAA GAGAAATTTA TACAAACCCA 1200
GTATTAGAAA ATTTTGATGG TAGTTTTCGA GGCTCGGCTC AGGGCATAGA
AAGAAGTATT AGGAGTCCAC ATTTGATGGA TATACTTAAC AGTATAACCA 1300
TCTATACGGA TGCTCATAGG GGTTATTATT ATTGGTCAGG GCATCAAATA
ATGGCTTCTC CTGTAGGGTT TTCGGGGCCA GAATTCACTT TTCCGCTATA 1400
TGGAACTATG GGAAATGCAG CTCCACAACA ACGTATTGTT GCTCAACTAG
GTCAGGGCGT GTATAGAACA TTATCGTCCA CTTTATATAG AAGACCTTTT 1500
AATATAGGGA TAAATAATCA ACAACTATCT GTTCTTGACG GGACAGAATT
TGCTTATGGA ACCTCCTCAA ATTTGCCATC CGCTGTATAC AGAAAAAGCG 1600
GAACGGTAGA TTCGCTGAAT GAAATACCGC CACAGAATAA CAACGTGCCA
CCTAGGCAAG AATTTAGTCA TCGATTAAGC CATGTTTCAA TGTTTCGTTC 1700
AGGCTTTAGT AATAGTAGTG TAAGTATAAT AAGAGCT (end hd-73)
(start HD-1) CCAACGT TTTCTTGGCA GCATCGCAGT 1900
GCTGAATTTA ATAATATAAT TCCTTCATCA CAAATTACAC AAATACCTTT
AACAAAATCT ACTAATCTTG GCTCTGGAAC TTCTGTCGTT AAAGGACCAG 2000
GATTTACAGG AGGAGATATT CTTCGAAGAA CTTCACCTGG CCAGATTTCA
ACCTTAAGAG TAAATATTAC TGCACCATTA TCACAAAGAT ATCGGGTAAG 2100
AATTCGCTAC GCTTCTACTA CAAATTTACA ATTCCATACA TCAATTGACG
GAAGACCTAT TAATCAGGGT AATTTTTCAG CAACTATGAG TAGTGGGAGT 2200
AATTTACAGT CCGGAAGCTT TAGGACTGTA GGTTTTACTA CTCCGTTTAA
CTTTTCAAAT GGATCAAGTG TATTTACGTT AAGTGCTCAT GTCTTCAATT 2300
CAGGCAATGA AGTTTATATA GATCGAATTG AATTTGTTCC GGCAGAAGTA
ACCTTTGAGG CAGAATATGA TTAGAAAGA GCACAAAAGG CGGTGAATGA 2400
GCTGTTTACT TCTTCCAATC AAATCGGGTT AAAAACAGAT GTGACGGATT
ATCATATTGA TCAAGTATCC AATTTAGTTG AGTGTTTATC AGATGAATTT 2500
TGTCTGGATG AAAAACAAGA ATTGTCCGAG AAAGTCAAAC ATGCGAAGCG
ACTTAGTGAT GAGCGGAATT TACTTCAAGA TCCAAACTTC AGAGGGATCA 2600
ATAGACAACT AGACCGTGGC TGGAGAGGAA GTACGGATAT TACCATCCAA
GGAGGCGATG ACGTATTCAA AGAGAATTAC GTTACGCTAT TGGGTACCTT 2700
TGATGAGTGC TATCCAACGT ATTTATATCA AAAAATAGAT GAGTCGAAAT
TAAAAGCCTA TACCCGTTAT CAATTAAGAG GGTATATCGA AGATAGTCAA 2800
GACTTAGAAA TCTATTTAAT TCGCTACAAT GCAAAACATG AAACAGTAAA
TGTGCCAGGT ACGGGTTCCT TATGGCCGCT TTCAGCCCAA AGTCCAATCG 2900
GAAAGTGTGG AGAGCCGAAT CGATGCGCGC CACACCTTGA ATGGAATCCT
GACTTAGATT GTTCGTGTAG GGATGGAGAA AAGTGTGCCC ATCATTCGCA 3000
TCATTTCTCC TTAGACATTG ATGTAGGATG TACAGACTTA AATGAGGACC
TAGGTGTATG GGTGATCTTT AAGATTAAGA CGCAAGATGG GCACGCAAGA 3100
CTAGGGAATC TAGAGTTTCT CGAAGAGAAA CCATTAGTAG GAGAAGCGCT
AGCTCGTGTG AAAAGAGCGG AGAAAAAATG GAGAGACAAA CGTGAAAAAT 3200
TGGAATGGGA AACAAATATC GTTTATAAAG AGGCAAAAGA ATCTGTAGAT
GCTTTATTTG TAAACTCTCA ATATGATCAA TTACAAGCGG ATACGAATAT 3300
TGCCATGATT CATGCGGCAG ATAAACGTGT TCATAGCATT CGAGAAGCTT
ATCTGCCTGA GCTGTCTGTG ATTCCGGGTG TCAATGCGGC TATTTTTGAA 3400
GAATTAGAAG GGCGTATTTT CACTGCATTC TCCCTATATG ATGCGAGAAA
TGTCATTAAA AATGGTGATT TTAATAATGG CTTATCCTGC TGGAACGTGA 3500
AAGGGCATGT AGATGTAGAA GAACAAAACA ACCAACGTTC GGTCCTTGTT
CTTCCGGAAT GGGAAGCAGA AGTGTCACAA GAAGTTCGTG TCTGTCCGGG 3600
TCGTGGCTAT ATCCTTCGTG TCACAGCGTA CAAGGAGGGA TATGGAGAAG
GTTGCGTAAC CATTCATGAG ATCGAGAACA ATACAGACGA ACTGAAGTTT 3700
AGCAACTGCG TAGAAGAGGA AATCTATCCA AATAACACGG TAACGTGTAA

```
TGATTATACT GTAAATCAAG AAGAATACGG AGGTGCGTAC ACTTCTCGTA 3800
ATCGAGGATA TAACGAAGCT CCTTCCGTAC CAGCTGATTA TGCGTCAGTC
TATGAAGAAA AATCGTATAC AGATGGACGA AGAGAGAATC CTTGTGAATT 3900
TAACAGAGGG TATAGGGATT ACACGCCACT ACCAGTTGGT TATGTGACAA
AAGAATTAGA ATACTTCCCA GAAACCGATA AGGTATGGAT TGAGATTGGA 4000
GAAACGGAAG GAACATTTAT CGTGGACAGC GTGGAATTAC TCCTTATGGA
GGAA (end HD-1).
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28. A recombinant DNA transfer vector comprising DNA having the following nucleotide sequence or equivalent nucleotide sequences containing bases whose translated region codes for the same amino acid sequence:

```
                (start HD-73)          ATG GATAACAATC 400
CGAACATCAA TGAATGCATT CCTTATAATT GTTTAAGTAA CCCTGAAGTA
GAAGTATTAG GTGGAGAAAG AATAGAAACT GGTTACACCC CAATCGATAT 500
TTCCTTGTCG CTAACGCAAT TTCTTTTGAG TGAATTTGTT CCCGGTGCTG
GATTTGTGTT AGGACTAGTT GATATAATAT GGGGAATTTT TGGTCCCTCT 600
CAATGGGACG CATTTCTTGT ACAAATTGAA CAGTTAATTA ACCAAAGAAT
AGAAGAATTC GCTAGGAACC AAGCCATTTC TAGATTAGAA GGACTAAGCA 700
ATCTTTATCA AATTTACGCA GAATCTTTTA GAGAGTGGGA AGCAGATCCT
ACTAATCCAG CATTAAGAGA AGAGATGCGT ATTCAATTCA ATGACATGAA 800
CAGTGCCCTT ACAACCGCTA TTCCTCTTTT TGCAGTTCAA AATTATCAAG
TTCCTCTTTT ATCAGTATAT GTTCAAGCTG CAAATTTACA TTTATCAGTT 900
TTGAGAGATG TTTCAGTGTT TGGACAAAGG TGGGGATTTG ATGCCGCGAC
TATCAATAGT CGTTATAATG ATTTAACTAG GCTTATTGGC AACTATACAG 1000
ATTATGCTGT ACGCTGGTAC AATACGGGAT TAGAACGTGT ATGGGGACCG
GATTCTAGAG ATTGGGTAAG GTATAATCAA TTTAGAAGAG AATTAACACT 1100
AACTGTATTA GATATCGTTG CTCTGTTCCC GAATTATGAT AGTAGAAGAT
ATCCAATTCG AACAGTTTCC CAATTAACAA GAGAAATTTA TACAAACCCA 1200
GTATTAGAAA ATTTTGATGG TAGTTTTCGA GGCTCGGCTC AGGGCATAGA
AGGAAGTATT AGGAGTCCAC ATTTGATGGA TATACTTAAC AGTATAACCA 1300
TCTATACGGA TGCTCATAAA GGGGAATATT ATTGGTCAGG GCATCAAATA
ATGGCTTCTC CTGTAGGGTT TTCGGGGCCA GAATTCACTT TTCCGCTATA 1400
TGGAACTATG GGAAATGCAG CTCCACAACA ACGTATTGTT GCTCAACTAG
GTCAGGGCGT GTATAGAACA TTATCGTCCA CTTTATATAG AAGACCTTTT 1500
AATATAGGGA TAAATAATCA ACAACTATCT GTTCTTGACG GGACAGAATT
TGCTTATGGA ACCTCCTCAA ATTTGCCATC CGCTGTATAC AGAAAAAGCG 1600
GAACGGTAGA TTCGCTGGAT GAAATACCGC CACAGAATAA CAACGTGCCA
CCTAGGCAAG GATTTAGTCA TCGATTAAGC CATGTTTCAA TGTTTCGTTC 1700
AGGCTTTAGT AATAGTAGTG TAAGTATAAT AAGAGCT (end hd-73)
   (start HD-1)          CCAACGT TTTCTTGGCA GCATCGCAGT 1900
GCTGAATTTA ATAATATAAT TCCTTCATCA CAAATTACAC AAATACCTTT
AACAAAATCT ACTAATCTTG GCTCTGGAAC TTCTGTCGTT AAAGGACCAG 2000
GATTTACAGG AGGAGATATT CTTCGAAGAA CTTCACCTGG CCAGATTTCA
ACCTTAAGAG TAAATATTAC TGCACCATTA TCACAAAGAT ATCGGGTAAG 2100
AATTCGCTAC GCTTCTACTA CAAATTTACA ATTCCATACA TCAATTGACG
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GAAGACCTAT TAATCAGGGT AATTTTTCAG CAACTATGAG TAGTGGGAGT 2200
AATTTACAGT CCGGAAGCTT TAGGACTGTA GGTTTTACTA CTCCGTTTAA
CTTTTCAAAT GGATCAAGTG TATTTACGTT AAGTGCTCAT GTCTTCAATT 2300
CAGGCAATGA AGTTTATATA GATCGAATTG AATTTGTTCC GGCAGAAGTA
ACCTTTGAGG CAGAATATGA TTTAGAAAGA GCACAAAAGG CGGTGAATGA 2400
GCTGTTTACT TCTTCCAATC AAATCGGGTT AAAAACAGAT GTGACGGATT
ATCATATTGA TCAAGTATCC AATTTAGTTG AGTGTTTATC AGATGAATTT 2500
TGTCTGGATG AAAAACAAGA ATTGTCCGAG AAAGTCAAAC ATGCGAAGCG
ACTTAGTGAT GAGCGGAATT TACTTCAAGA TCCAAACTTC AGAGGGATCA 2600
ATAGACAACT AGACCGTGGC TGGAGAGGAA GTACGGATAT TACCATCCAA
GGAGGCGATG ACGTATTCAA AGAGAATTAC GTTACGCTAT TGGGTACCTT 2700
TGATGAGTGC TATCCAACGT ATTTATATCA AAAAATAGAT GAGTCGAAAT
TAAAAGCCTA TACCCGTTAT CAATTAAGAG GGTATATCGA AGATAGTCAA 2800
GACTTAGAAA TCTATTTAAT TCGCTACAAT GCAAAACATG AAACAGTAAA
TGTGCCAGGT ACGGGTTCCT TATGGCCGCT TTCAGCCCAA AGTCCAATCG 2900
GAAAGTGTGG AGAGCCGAAT CGATGCGCGC CACACCTTGA ATGGAATCCT
GACTTAGATT GTTCGTGTAG GGATGGAGAA AAGTGTGCCC ATCATTCGCA 3000
TCATTTCTCC TTAGACATTG ATGTAGGATG TACAGACTTA AATGAGGACC
TAGGTGTATG GGTGATCTTT AAGATTAAGA CGCAAGATGG GCACGCAAGA 3100
CTAGGGAATC TAGAGTTTCT CGAAGAGAAA CCATTAGTAG GAGAAGCGCT
AGCTCGTGTG AAAAGAGCGG AGAAAAAATG GAGAGACAAA CGTGAAAAAT 3200
TGGAATGGGA AACAAATATC GTTTATAAAG AGGCAAAAGA ATCTGTAGAT
GCTTTATTTG TAAACTCTCA ATATGATCAA TTACAAGCGG ATACGAATAT 3300
TGCCATGATT CATGCGGCAG ATAAACGTGT TCATAGCATT CGAGAAGCTT
ATCTGCCTGA GCTGTCTGTG ATTCCGGGTG TCAATGCGGC TATTTTTGAA 3400
GAATTAGAAG GGCGTATTTT CACTGCATTC TCCCTATATG ATGCGAGAAA
TGTCATTAAA AATGGTGATT TTAATAATGG CTTATCCTGC TGGAACGTGA 3500
AAGGGCATGT AGATGTAGAA GAACAAAACA ACCAACGTTC GGTCCTTGTT
CTTCCGGAAT GGGAAGCAGA AGTGTCACAA GAAGTTCGTG TCTGTCCGGG 3600
TCGTGGCTAT ATCCTTCGTG TGACAGCGTA CAAGGAGGGA TATGGAGAAG
GTTGCGTAAC CATTCATGAG ATCGAGAACA ATACAGACGA ACTGAAGTTT 3700
AGCAACTGCG TAGAAGAGGA AATCTATCCA AATAACACGG TAACGTGTAA
TGATTATACT GTAAATCAAG AAGAATACGG AGGTGCGTAC ACTTCTCGTA 3800
ATCGAGGATA TAACGAAGCT CCTTCCGTAC CAGCTGATTA TGCGTCAGTC
TATGAAGAAA AATCGTATAC AGATGGACGA AGAGAGAATC CTTGTGAATT 3900
TAACAGAGGG TATAGGGATT ACACGCCACT ACCAGTTGGT TATGTGACAA
AAGAATTAGA ATACTTCCCA GAAACCGATA AGGTATGGAT TGAGATTGGA 4000
GAAACGGAAG GAACATTTAT CGTGGACAGC GTGGAATTAC TCCTTATGGA
GGAA (end HD-1).
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29. The DNA transfer vector of claim 25 transferred to and replicated in a prokaryotic or lower eukaryotic microorganism.

30. The DNA transfer vector of claim 26 transferred to and replicated in a prokaryotic or lower eukaryotic microorganism.

31. The DNA transfer vector of claim 27 transferred to and replicated in a prokaryotic or lower eukaryotic microorganism.

32. The DNA transfer vector of claim 28 transferred to and replicated in a prokaryotic or lower eukaryotic microorganism.

33. Plasmid pEW1 as shown in FIGURE 1 of the drawings.

34. Plasmid pEW2 as shown in FIGURE 2 of the drawings.

35. Plasmid pEW3 as shown in FIGURE 3 of the drawings.

36. Plasmid pEW4 as shown in FIGURE 4 of the drawings.

37. Plasmid pACB-1, having the construction of plasmid pEW3 except that the DNA encoding aspartic acid at position 411 is converted to encode asparagine, and the DNA encoding glycine at position 425 is converted to encode glutamic acid.

38. Plasmid pSYW1, having the construction of plasmid pEW3 except that the DNA encoding arginine at position 289 is converted to encode glycine, the DNA encoding arginine at position 311 is converted to encode lysine, and the DNA encoding tyrosine at position 313 is converted to encode glutamate.

39. A microorganism transformed by the transfer vector of claim 25.

40. A microorganism transformed by the transfer vector of claim 26.

41. A microorganism transformed by the transfer vector of claim 27.

42. A microorganism transformed by the transfer vector of claim 28.

43. E. coli (pEW3), a microorganism according to claim 39.

44. E. coli (pEW4), a microorganism according to claim 40.

45. E. coli (pACB-1), a microorganism according to claim 41.

46. E. coli (pSYW1), a microorganism according to claim 42.

47. A process for preparing pesticidal chimeric toxin EW3 having the following amino acid sequence:

MDNNPNINECIPYNCLSNPEVEVLGGERIE
TGYTPIDISLSLTQFLLSEFVPGAGFVLGL
VDIIWGIFGPSQWDAFLVQIEQLINQRIEE
FARNQAISRLEGLSNLYQIYAESFREWEAD
PTNPALREEMRIQFNDMNSALTTAIPLFAV
QNYQVPLLSVYVQAANLHLSVLRDVSVFGQ
RWGFDAATINSRYNDLTRLIGNYTDYAVRW
YNTGLERVWGPDSRDWVRYNQFRRELTLTV
LDIVALFPNYDSRRYPIRTVSQLTREIYTN
PVLENFDGSFRGSAQGIERSIRSPHLMDIL
NSITIYTDAHRGYYYWSGHQIMASPVGFSG

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P E F T F P L Y G T M G N A A P Q Q R I V A Q L G Q G V Y R
T L S S T L Y R R P F N I G I N N Q Q L S V L D G T E F A Y
G T S S N L P S A V Y R K S G T V D S L D E I P P Q N N N V
P P R Q G F S H R L S H V S M F R S G F S N S S V S I I R A
P T F S W Q H R S A E F N N I I P S S Q I T Q I P L T K S T
N L G S G T S V V K G P G F T G G D I L R R T S P G Q I S T
L R V N I T A P L S Q R Y R V R I R Y A S T T N L Q F H T S
I D G R P I N Q G N F S A T M S S G S N L Q S G S F R T V G
F T T P F N F S N G S S V F T L S A H V F N S G N E V Y I D
R I E F V P A E V T F E A E Y D L E R A Q K A V N E L F T S
S N Q I G L K T D V T D Y H I D Q V S N L V E C L S D E F C
L D E K Q E L S E K V K H A K R L S D E R N L L Q D P N F R
G I N R Q L D R G W R G S T D I T I Q G G D D V F K E N Y V
T L L G T F D E C Y P T Y L Y Q K I D E S K L K A Y T R Y Q
L R G Y I E D S Q D L E I Y L I R Y N A K H E T V N V P G T
G S L W P L S A Q S P I G K C G E P N R C A P H L E W N P D
L D C S C R D G E K C A H H S H H F S L D I D V G C T D L N
E D L G V W V I F K I K T Q D G H A R L G N L E F L E E K P
L V G E A L A R V K R A E K K W R D K R E K L E W E T N I V
Y K E A K E S V D A L F V N S Q Y D Q L Q A D T N I A M I H
A A D K R V H S I R E A Y L P E L S V I P G V N A A I F E E
L E G R I F T A F S L Y D A R N V I K N G D F N N G L S C W
N V K G H V D V E E Q N N Q R S V L V L P E W E A E V S Q E
V R V C P G R G Y I L R V T A Y K E G Y G E G C V T I H E I
E N N T D E L K F S N C V E E E I Y P N N T V T C N D Y T V
N Q E E Y G G A Y T S R N R G Y N E A P S V P A D Y A S V Y
E E K S Y T D G R R E N P C E F N R G Y R D Y T P L P V G Y
V T K E L E Y F P E T D K V W I E I G E T E G T F I V D S V
E L L L M E E
```

which comprises culturing a prokaryotic microbe hosting a recombinant DNA transfer vector, denoted pEW3, comprising DNA having the following nucleotide sequence or equivalent nucleotide sequences containing bases whose translated region codes for the same amino acid sequence:

```
                (start HD-73)                ATG GATAACAATC 400
CGAACATCAA TGAATGCATT CCTTATAATT GTTTAAGTAA CCCTGAAGTA
GAAGTATTAG GTGGAGAAAG AATAGAAACT GGTTACACCC CAATCGATAT 500
TTCCTTGTCG CTAACGCAAT TTCTTTTGAG TGAATTTGTT CCCGGTGCTG
GATTTGTGTT AGGACTAGTT GATATAATAT GGGGAATTTT TGGTCCCTCT 600
CAATGGGACG CATTTCTTGT ACAAATTGAA CAGTTAATTA ACCAAAGAAT
AGAAGAATTC GCTAGGAACC AAGCCATTTC TAGATTAGAA GGACTAAGCA 700
ATCTTTATCA AATTTACGCA GAATCTTTTA GAGAGTGGGA AGCAGATCCT
ACTAATCCAG CATTAAGAGA AGAGATGCGT ATTCAATTCA ATGACATGAA 800
CAGTGCCCTT ACAACCGCTA TTCCTCTTTT TGCAGTTCAA AATTATCAAG
TTCCTCTTTT ATCAGTATAT GTTCAAGCTG CAAATTTACA TTTATCAGTT 900
TTGAGAGATG TTTCAGTGTT TGGACAAAGG TGGGGATTTG ATGCCGCGAC
```

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61    TATCAATAGT CGTTATAATG ATTTAACTAG GCTTATTGGC AACTATACAG 1000
62    ATTATGCTGT ACGCTGGTAC AATACGGGAT TAGAACGTGT ATGGGGACCG
63    GATTCTAGAG ATTGGGTAAG GTATAATCAA TTTAGAAGAG AATTAACACT 1100
64    AACTGTATTA GATATCGTTG CTCTGTTCCC GAATTATGAT AGTAGAAGAT
65    ATCCAATTCG AACAGTTTCC CAATTAACAA GAGAAATTTA TACAAACCCA 1200
66    GTATTAGAAA ATTTTGATGG TAGTTTTCGA GGCTCGGCTC AGGGCATAGA
67    AAGAAGTATT AGGAGTCCAC ATTTGATGGA TATACTTAAC AGTATAACCA 1300
68    TCTATACGGA TGCTCATAGG GGTTATTATT ATTGGTCAGG GCATCAAATA
69    ATGGCTTCTC CTGTAGGGTT TTCGGGGCCA GAATTCACTT TTCCGCTATA 1400
70    TGGAACTATG GGAAATGCAG CTCCACAACA ACGTATTGTT GCTCAACTAG
71    GTCAGGGCGT GTATAGAACA TTATCGTCCA CTTTATATAG AAGACCTTTT 1500
72    AATATAGGGA TAAATAATCA ACAACTATCT GTTCTTGACG GGACAGAATT
73    TGCTTATGGA ACCTCCTCAA ATTTGCCATC CGCTGTATAC AGAAAAAGCG 1600
74    GAACGGTAGA TTCGCTGGAT GAAATACCGC CACAGAATAA CAACGTGCCA
75    CCTAGGCAAG GATTTAGTCA TCGATTAAGC CATGTTTCAA TGTTTCGTTC 1700
76    AGGCTTTAGT AATAGTAGTG TAAGTATAAT AAGAGCT (end hd-73)
77        (start HD-1)          CCAACGT TTTCTTGGCA GCATCGCAGT 1900
78    GCTGAATTTA ATAATATAAT TCCTTCATCA CAAATTACAC AAATACCTTT
79    AACAAAATCT ACTAATCTTG GCTCTGGAAC TTCTGTCGTT AAAGGACCAG 2000
80    GATTTACAGG AGGAGATATT CTTCGAAGAA CTTCACCTGG CCAGATTTCA
81    ACCTTAAGAG TAAATATTAC TGCACCATTA TCACAAAGAT ATCGGGTAAG 2100
82    AATTCGCTAC GCTTCTACTA CAAATTTACA ATTCCATACA TCAATTGACG
83    GAAGACCTAT TAATCAGGGT AATTTTTCAG CAACTATGAG TAGTGGGAGT 2200
84    AATTTACAGT CCGGAAGCTT TAGGACTGTA GGTTTTACTA CTCCGTTTAA
85    CTTTTCAAAT GGATCAAGTG TATTTACGTT AAGTGCTCAT GTCTTCAATT 2300
86    CAGGCAATGA AGTTTATATA GATCGAATTG AATTTGTTCC GGCAGAAGTA
87    ACCTTTGAGG CAGAATATGA TTTAGAAAGA GCACAAAAGG CGGTGAATGA 2400
88    GCTGTTTACT TCTTCCAATC AAATCGGGTT AAAAACAGAT GTGACGGATT
89    ATCATATTGA TCAAGTATCC AATTTAGTTG AGTGTTTATC AGATGAATTT 2500
90    TGTCTGGATG AAAAACAAGA ATTGTCCGAG AAAGTCAAAC ATGCGAAGCG
91    ACTTAGTGAT GAGCGGAATT TACTTCAAGA TCCAAACTTC AGAGGGATCA 2600
92    ATAGACAACT AGACCGTGGC TGGAGAGGAA GTACGGATAT TACCATCCAA
93    GGAGGCGATG ACGTATTCAA AGAGAATTAC GTTACGCTAT TGGGTACCTT 2700
94    TGATGAGTGC TATCCAACGT ATTTATATCA AAAAATAGAT GAGTCGAAAT
95    TAAAAGCCTA TACCCGTTAT CAATTAAGAG GGTATATCGA AGATAGTCAA 2800
96    GACTTAGAAA TCTATTTAAT TCGCTACAAT GCAAAACATG AAACAGTAAA
97    TGTGCCAGGT ACGGGTTCCT TATGGCCGCT TTCAGCCCAA AGTCCAATCG 2900
98    GAAAGTGTGG AGAGCCGAAT CGATGCGCGC CACACCTTGA ATGGAATCCT
99    GACTTAGATT GTTCGTGTAG GGATGGAGAA AAGTGTGCCC ATCATTCGCA 3000
100   TCATTTCTCC TTAGACATTG ATGTAGGATG TACAGACTTA AATGAGGACC
101   TAGGTGTATG GGTGATCTTT AAGATTAAGA CGCAAGATGG GCACGCAAGA 3100
102   CTAGGGAATC TAGAGTTTCT CGAAGAGAAA CCATTAGTAG GAGAAGCGCT
103   AGCTCGTGTG AAAAGAGCGG AGAAAAAATG GAGAGACAAA CGTGAAAAAT 3200
104   TGGAATGGGA AACAAATATC GTTTATAAAG AGGCAAAAGA ATCTGTAGAT
105   GCTTTATTTG TAAACTCTCA ATATGATCAA TTACAAGCGG ATACGAATAT 3300
106   TGCCATGATT CATGCGGCAG ATAAACGTGT TCATAGCATT CGAGAAGCTT
107   ATCTGCCTGA GCTGTCTGTG ATTCCGGGTG TCAATGCGGC TATTTTTGAA 3400
108   GAATTAGAAG GGCGTATTTT CACTGCATTC TCCCTATATG ATGCGAGAAA
109   TGTCATTAAA AATGGTGATT TTAATAATGG CTTATCCTGC TGGAACGTGA 3500
110   AAGGGCATGT AGATGTAGAA GAACAAAACA ACCAACGTTC GGTCCTTGTT
111   CTTCCGGAAT GGGAAGCAGA AGTGTCACAA GAAGTTCGTG TCTGTCCGGG 3600
112   TCGTGGCTAT ATCCTTCGTG TCACAGCGTA CAAGGAGGGA TATGGAGAAG
113   GTTGCGTAAC CATTCATGAG ATCGAGAACA ATACAGACGA ACTGAAGTTT 3700
114   AGCAACTGCG TAGAAGAGGA AATCTATCCA AATAACACGG TAACGTGTAA
```

TGATTATACT GTAAATCAAG AAGAATACGG AGGTGCGTAC ACTTCTCGTA 3800
ATCGAGGATA TAACGAAGCT CCTTCCGTAC CAGCTGATTA TGCGTCAGTC
TATGAAGAAA AATCGTATAC AGATGGACGA AGAGAGAATC CTTGTGAATT 3900
TAACAGAGGG TATAGGGATT ACACGCCACT ACCAGTTGGT TATGTGACAA
AAGAATTAGA ATACTTCCCA GAAACCGATA AGGTATGGAT TGAGATTGGA 4000
GAAACGGAAG GAACATTTAT CGTGGACAGC GTGGAATTAC TCCTTATGGA
GGAA (end HD-1).

48. A process for preparing pesticidal chimeric toxin EW4 having the following amino acid sequence:

MDNNPNINECIPYNCLSNPEVEVLGGERIE
TGYTPIDISLSLTQFLLSEFVPGAGFVLGL
VDIIWGIFGPSQWDAFPVQIEQLINQRIEE
FARNQAISRLEGLSNLYQIYAESFREWEAD
PTNPALREEMRIQFNDMNSALTTAIPLLAV
QNYQVPLLSVYVQAANLHLSVLRDVSVFGQ
RWGFDAATINSRYNDLTRLIGNYTDYAVRW
YNTGLERVWGPDSRDWVRYNQFRRELTLTV
LDIVALFSNYDSRRYPIRTVSQLTREIYTN
PVLENFDGSFRGMAQRIEQNIRQPHLMDIL
NSITIYTDVHRGFNYWSGHQITASPVGFSG
PEFAFPLFGNAGNAAPPVLVSLTGLGIFRT
LSSPLYRRIILGSGPNNQELFVLDGTEFSF
ASLTTNLPSTIYRQRGTVDSLDVIPPQDNS
VPPRAGFSHRLSHVTMLSQAAGAVYTLRAQ
RPMFSWIHRSAEFNNIIASDSITQIPAVKG
NFLFNGSVISGPGFTGGDLVRLNSSGNNIQ
NRGYIEVPIHFPSTSTRYRVRVRYASVTPI
HLNVNWGNSSIFSNTVPATATSLDNLQSSD
FGYFESANAFTSSLGNIVGVRNFSGTAGVI
IDRFEFIPVTATLEAEYNLERAQKAVNALF
TSTNQLGLKTNVTDYHIDQVSNLVTYLSDE
FCLDEKRELSEKVKHAKRLSDERNLLQDSN
FKDINRQPERGWGGSTGITIQGGDDVFKEN
YVTLSGTFDECYPTYLYQKIDESKLKAFTR
YQLRGYIEDSQDLEIYLIRYNAKHETVNVP
GTGSLWPLSAQSPIGKCGEPNRCAPHLEWN
PDLDCSCRDGEKCAHHSHHFSLDIDVGCTD
LNEDLGVWVIFKIKTQDGHARLGNLEFLEE
KPLVGEALARVKRAEKKWRDKREKLEWETN
IVYKEAKESVDALFVNSQYDQLQADTNIAM
IHAADKRVHSIREAYLPELSVIPGVNAAIF
EELEGRIFTAFSLYDARNVIKNGDFNNGLS
CWNVKGHVDVEEQNNQRSVLVVPEWEAEVS
QEVRVCPGRGYILRVTAYKEGYGEGCVTIH
EIENNTDELKFSNCVEEEIYPNNTVTCNDY
TVNQEEYGGAYTSRNRGYNEAPSVPADYAS
VYEEKSYTDGRRENPCEFNRGYRDYTPLPV
GYVTKELEYFPETDKVWIEIGETEGTFIVD
SVELLLMEE

which comprises culturing a prokaryotic microbe hosting a recombinant DNA transfer vector, denoted pEW4, comprising DNA having the following nucleotide sequence or equivalent nucleotide sequences containing bases whose translated region codes for the same amino acid sequence:

```
      (start HD-1)          ATGG ATAACAATCC GAACATCAAT
GAATGCATTC CTTATAATTG TTTAAGTAAC CCTGAAGTAG AAGTATTAGG 600
TGGAGAAAGA ATAGAAACTG GTTACACCCC AATCGATATT TCCTTGTCGC
TAACGCAATT TCTTTTGAGT GAATTTGTTC CCGGTGCTGG ATTTGTGTTA 700
GGACTAGTTG ATATAATATG GGGAATTTTT GGTCCCTCTC AATGGGACGC
ATTTCCTGTA CAAATTGAAC AGTTAATTAA CCAAAGAATA GAAGAATTCG 800
CTAGGAACCA AGCCATTTCT AGATTAGAAG GACTAAGCAA TCTTTATCAA
ATTTACGCAG AATCTTTTAG AGAGTGGGAA GCAGATCCTA CTAATCCAGC 900
ATTAAGAGAA GAGATGCGTA TTCAATTCAA TGACATGAAC AGTGCCCTTA
CAACCGCTAT TCCTCTTTTG GCAGTTCAAA ATTATCAAGT TCCTCTTTTA 1000
TCAGTATATG TTCAAGCTGC AAATTTACAT TTATCAGTTT TGAGAGATGT
TTCAGTGTTT GGACAAAGGT GGGGATTTGA TGCCGCGACT ATCAATAGTC 1100
GTTATAATGA TTTAACTAGG CTTATTGGCA ACTATACAGA TTATGCTGTG
CGCTGGTACA ATACGGGATT AGAGCGTGTA TGGGGACCGG ATTCTAGAGA 1200
TTGGGTAAGG TATAATCAAT TTAGAAGAGA GCTAACACTT ACTGTATTAG
ATATCGTTGC TCTATTCTCA AATTATGATA GTCGAAGGTA TCCAATTCGA 1300
ACAGTTTCCC AATTAACAAG AGAAATTTAT ACGAACCCAG TATTAGAAAA
TTTTGATGGT AGTTTTCGTG GAATGGCTCA GAGAATAGAA CAGAATATTA 1400
GGCAACCACA TCTTATGGAT ATCCTTAATA GTATAACCAT TTATACTGAT
GTGCATAGAG GCTTTAATTA TTGGTCAGGG CATCAAATAA CAGCTTCTCC 1500
TGTAGGGTTT TCAGGACGAG AATTCGCATT CCCTTTATTT GGGAATGCGG
GGAATGCAGC TCCACCCGTA CTTGTCTCAT TAACTGGTTT GGGGATTTTT 1600
AGAACATTAT CTTCACCTTT ATATAGAAGA ATTATACTTG GTTCAGGCCC
AAATAATCAG GAACTGTTTG TCCTTGATGG AACGGAGTTT TCTTTTGCCT 1700
CCCTAACGAC CAACTTGCCT TCCACTATAT ATAGACAAAG GGGTACAGTC
GATTCACTAG ATGTAATACC GCCACAGGAT AATAGTGTAC CACCTCGTGC 1800
GGGATTTAGC CATCGATTGA GTCATGTTAC AATGCTGAGC CAAGCAGCTG
GAGCAGTTTA CACCTTGAGA GCTCAACGT  (stop HD-1)
                (start HD-73)          CCT ATGTTCTCTT
GGATACATCG TAGTGCTGAA TTTAATAATA TAATTGCATC GGATAGTATT 1800
ACTCAAATCC CTGCAGTGAA GGGAAACTTT CTTTTTAATG GTTCTGTAAT
TTCAGGACCA GGATTTACTG GTGGGGACTT AGTTAGATTA AATAGTAGTG 1900
GAAATAACAT TCAGAATAGA GGGTATATTG AAGTTCCAAT TCACTTCCCA
TCGACATCTA CCAGATATCG AGTTCGTGTA CGGTATGCTT CTGTAACCCC 2000
GATTCACCTC AACGTTAATT GGGGTAATTC ATCCATTTTT TCCAATACAG
TACCAGCTAC AGCTACGTCA TTAGATAATC TACAATCAAG TGATTTTGGT 2100
TATTTTGAAA GTGCCAATGC TTTTACATCT TCATTAGGTA ATATAGTAGG
TGTTAGAAAT TTTAGTGGGA CTGCAGGAGT GATAATAGAC AGATTTGAAT 2200
TTATTCCAGT TACTGCAACA CTCGAGGCTG AATATAATCT GGAAAGAGCG
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 88  CAGAAGGCGG TGAATGCGCT GTTTACGTCT ACAAACCAAC TAGGGCTAAA 2300
 89  AACAAATGTA ACGGATTATC ATATTGATCA AGTGTCCAAT TTAGTTACGT
 90  ATTTATCGGA TGAATTTTGT CTGGATGAAA AGCGAGAATT GTCCGAGAAA 2400
 91  GTCAAACATG CGAAGCGACT CAGTGATGAA CGCAATTTAC TCCAAGATTC
 92  AAATTTCAAA GACATTAATA GGCAACCAGA ACGTGGGTGG GGCGGAAGTA 2500
 93  CAGGGATTAC CATCCAAGGA GGGGATGACG TATTTAAAGA AAATTACGTC
 94  ACACTATCAG GTACCTTTGA TGAGTGCTAT CCAACATATT TGTATCAAAA 2600
 95  AATCGATGAA TCAAAATTAA AAGCCTTTAC CCGTTATCAA TTAAGAGGGT
 96  ATATCGAAGA TAGTCAAGAC TTAGAAATCT ATTTAATTCG CTACAATGCA 2700
 97  AAACATGAAA CAGTAAATGT GCCAGGTACG GGTTCCTTAT GGCCGCTTTC
 98  AGCCCAAAGT CCAATCGGAA AGTGTGGAGA GCCGAATCGA TGCGCGCCAC 2800
 99  ACCTTGAATG GAATCCTGAC TTAGATTGTT CGTGTAGGGA TGGAGAAAAG
100  TGTGCCCATC ATTCGCATCA TTTCTCCTTA GACATTGATG TAGGATGTAC 2900
101  AGACTTAAAT GAGGACCTAG GTGTATGGGT GATCTTTAAG ATTAAGACGC
102  AAGATGGGCA CGCAAGACTA GGGAATCTAG AGTTTCTCGA AGAGAAACCA 3000
103  TTAGTAGGAG AAGCGCTAGC TCGTGTGAAA AGAGCGGAGA AAAAATGGAG
104  AGACAAACGT GAAAAATTGG AATGGGAAAC AAATATCGTT TATAAAGAGG 3100
105  CAAAAGAATC TGTAGATGCT TTATTTGTAA ACTCTCAATA TGATCAATTA
106  CAAGCGGATA CGAATATTGC CATGATTCAT GCGGCAGATA AACGTGTTCA 3200
107  TAGCATTCGA GAAGCTTATC TGCCTGAGCT GTCTGTGATT CCGGGTGTCA
108  ATGCGGCTAT TTTTGAAGAA TTAGAAGGGC GTATTTTCAC TGCATTCTCC 3300
109  CTATATGATG CGAGAAATGT CATTAAAAAT GGTGATTTTA ATAATGGCTT
110  ATCCTGCTGG AACGTGAAAG GGCATGTAGA TGTAGAAGAA CAAAACAACC 3400
111  AACGTTCGGT CCTTGTTGTT CCGGAATGGG AAGCAGAAGT GTCACAAGAA
112  GTTCGTGTCT GTCCGGGTCG TGGCTATATC CTTCGTGTCA CAGCGTACAA 3500
113  GGAGGGATAT GGAGAAGGTT GCGTAACCAT TCATGAGATC GAGAACAATA
114  CAGACGAACT GAAGTTTAGC AACTGCGTAG AAGAGGAAAT CTATCCAAAT 3600
115  AACACGGTAA CGTGTAATGA TTATACTGTA AATCAAGAAG AATACGGAGG
116  TGCGTACACT TCTCGTAATC GAGGATATAA CGAAGCTCCT TCCGTACCAG 3700
117  CTGATTATGC GTCAGTCTAT GAAGAAAAAT CGTATACAGA TGGACGAAGA
118  GAGAATCCTT GTGAATTTAA CAGAGGGTAT AGGGATTACA CGCCACTACC 3800
119  AGTTGGTTAT GTGACAAAAG AATTAGAATA CTTCCCAGAA ACCGATAAGG
120  TATGGATTGA GATTGGAGAA ACGGAAGGAA CATTTATCGT GGACAGCGTG 3900
121  GAATTACTCC TTATGGAGGA A (end HD-73).
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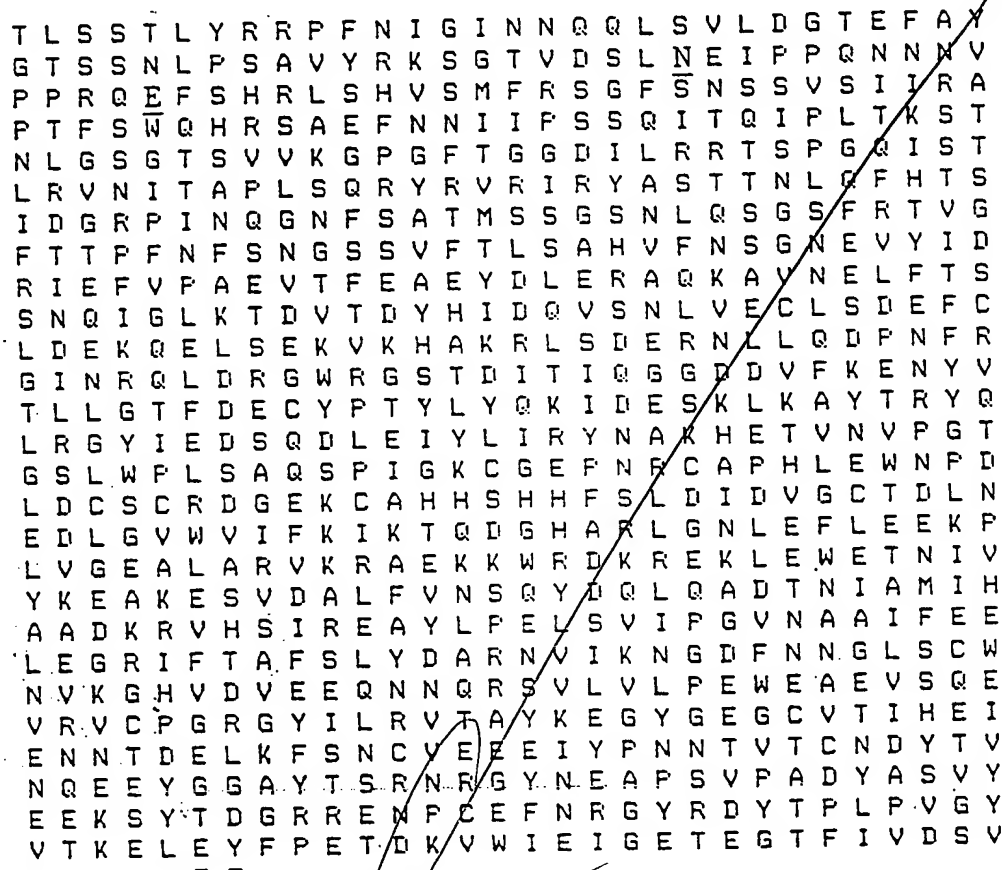
1 49. A process for preparing pesticidal chimeric
2 toxin ACB-1 having the following amino acid sequence:

```
 3  M D N N P N I N E C I P Y N C L S N P E V E V L G G E R I E
 4  T G Y T P I D I S L S L T Q F L L S E F V P G A G F V L G L
 5  V D I I W G I F G P S Q W D A F L V Q I E Q L I N Q R I E E
 6  F A R N Q A I S R L E G L S N L Y Q I Y A E S F R E W E A D
 7  P T N P A L R E E M R I Q F N D M N S A L T T A I P L F A V
 8  Q N Y Q V P L L S V Y V Q A A N L H L S V L R D V S V F G Q
 9  R W G F D A A T I N S R Y N D L T R L I G N Y T D Y A V R W
10  Y N T G L E R V W G P D S R D W V R Y N Q F R R E L T L T V
11  L D I V A L F P N Y D S R R Y P I R T V S Q L T R E I Y T N
12  P V L E N F D G S F R G S A Q G I E R S I R S P H L M D I L
13  N S I T I Y T D A H R G Y Y Y W S G H Q I M A S P V G F S G
14  P E F T F P L Y G T M G N A A P Q Q R I V A Q L G Q G V Y R
```



which comprises culturing a prokaryotic microbe hosting a recombinant DNA transfer vector, denoted pACB-1, comprising DNA having the following nucleotide sequence or equivalent nucleotide sequences containing bases whose translated region codes for the same amino acid sequence:

(start HD-73) ATG GATAACAATC 400
CGAACATCAA TGAATGCATT CCTTATAATT GTTTAAGTAA CCCTGAAGTA
GAAGTATTAG GTGGAGAAAG AATAGAAACT GGTTACACCC CAATCGATAT 500
TTCCTTGTCG CTAACGCAAT TTCTTTTGAG TGAATTTGTT CCCGGTGCTG
GATTTGTGTT AGGACTAGTT GATATAATAT GGGGAATTTT TGGTCCCTCT 600
CAATGGGACG CATTTCTTGT ACAAATTGAA CAGTTAATTA ACCAAAGAAT
AGAAGAATTC GCTAGGAACC AAGCCATTTC TAGATTAGAA GGACTAAGCA 700
ATCTTTATCA AATTTACGCA GAATCTTTTA GAGAGTGGGA AGCAGATCCT
ACTAATCCAG CATTAAGAGA AGAGATGCGT ATTCAATTCA ATGACATGAA 800
CAGTGCCCTT ACAACCGCTA TTCCTCTTTT TGCAGTTCAA AATTATCAAG
TTCCTCTTTT ATCAGTATAT GTTCAAGCTG CAAATTTACA TTTATCAGTT 900
TTGAGAGATG TTTCAGTGTT TGGACAAAGG TGGGGATTTG ATGCCGCGAC

```
61    TATCAATAGT CGTTATAATG ATTTAACTAG GCTTATTGGC AACTATACAG 1000
62    ATTATGCTGT ACGCTGGTAC AATACGGGAT TAGAACGTGT ATGGGGACCG
63    GATTCTAGAG ATTGGGTAAG GTATAATCAA TTTAGAAGAG AATTAACACT 1100
64    AACTGTATTA GATATCGTTG CTCTGTTCCC GAATTATGAT AGTAGAAGAT
65    ATCCAATTCG AACAGTTTCC CAATTAACAA GAGAAATTTA TACAAACCCA 1200
66    GTATTAGAAA ATTTTGATGG TAGTTTTCGA GGCTCGGCTC AGGGCATAGA
67    AAGAAGTATT AGGAGTCCAC ATTTGATGGA TATACTTAAC AGTATAACCA 1300
68    TCTATACGGA TGCTCATAGG GGTTATTATT ATTGGTCAGG GCATCAAATA
69    ATGGCTTCTC CTGTAGGGTT TTCGGGGCCA GAATTCACTT TTCCGCTATA 1400
70    TGGAACTATG GGAAATGCAG CTCCACAACA ACGTATTGTT GCTCAACTAG
71    GTCAGGGCGT GTATAGAACA TTATCGTCCA CTTTATATAG AAGACCTTTT 1500
72    AATATAGGGA TAAATAATCA ACAACTATCT GTTCTTGACG GGACAGAATT
73    TGCTTATGGA ACCTCCTCAA ATTTGCCATC CGCTGTATAC AGAAAAAGCG 1600
74    GAACGGTAGA TTCGCTGAAT GAAATACCGC CACAGAATAA CAACGTGCCA
75    CCTAGGCAAG AATTTAGTCA TCGATTAAGC CATGTTTCAA TGTTTCGTTC 1700
76    AGGCTTTAGT AATAGTAGTG TAAGTATAAT AAGAGCT (end hd-73)
77        (start HD-1)          CCAACGT TTTCTTGGCA GCATCGCAGT 1900
78    GCTGAATTTA ATAATATAAT TCCTTCATCA CAAATTACAC AAATACCTTT
79    AACAAAATCT ACTAATCTTG GCTCTGGAAC TTCTGTCGTT AAAGGACCAG 2000
80    GATTTACAGG AGGAGATATT CTTCGAAGAA CTTCACCTGG CCAGATTTCA
81    ACCTTAAGAG TAAATATTAC TGCACCATTA TCACAAAGAT ATCGGGTAAG 2100
82    AATTCGCTAC GCTTCTACTA CAAATTTACA ATTCCATACA TCAATTGACG
83    GAAGACCTAT TAATCAGGGT AATTTTTCAG CAACTATGAG TAGTGGGAGT 2200
84    AATTTACAGT CCGGAAGCTT TAGGACTGTA GGTTTTACTA CTCCGTTTAA
85    CTTTTCAAAT GGATCAAGTG TATTTACGTT AAGTGCTCAT GTCTTCAATT 2300
86    CAGGCAATGA AGTTTATATA GATCGAATTG AATTTGTTCC GGCAGAAGTA
87    ACCTTTGAGG CAGAATATGA TTTAGAAAGA GCACAAAAGG CGGTGAATGA 2400
88    GCTGTTTACT TCTTCCAATC AAATCGGGTT AAAAACAGAT GTGACGGATT
89    ATCATATTGA TCAAGTATCC AATTTAGTTG ATGTTTTATC AGATGAATTT 2500
90    TGTCTGGATG AAAAACAAGA ATTGTCCGAG AAAGTCAAAC ATGCGAAGCG
91    ACTTAGTGAT GAGCGGAATT TACTTCAAGA TCCAAACTTC AGAGGGATCA 2600
92    ATAGACAACT AGACCGTGGC TGGAGAGGAA GTACGGATAT TACCATCCAA
93    GGAGGCGATG ACGTATTCAA AGAGAATTAC GTTACGCTAT TGGGTACCTT 2700
94    TGATGAGTGC TATCCAACGT ATTTATATCA AAAAATAGAT GAGTCGAAAT
95    TAAAAGCCTA TACCCGTTAT CAATTAAGAG GGTATATCGA AGATAGTCAA 2800
96    GACTTAGAAA TCTATTTAAT TCGCTACAAT GCAAAACATG AAACAGTAAA
97    TGTGCCAGGT ACGGGTTCCT TATGGCCGCT TTCAGCCCAA AGTCCAATCG 2900
98    GAAAGTGTGG AGAGCCGAAT CGATGCGCGC CACACCTTGA ATGGAATCCT
99    GACTTAGATT GTTCGTGTAG GGATGGAGAA AAGTGTGCCC ATCATTCGCA 3000
100   TCATTTCTCC TTAGACATTG ATGTAGGATG TACAGACTTA AATGAGGACC
101   TAGGTGTATG GGTGATCTTT AAGATTAAGA CGCAAGATGG GCACGCAAGA 3100
102   CTAGGGAATC TAGAGTTTCT CGAAGAGAAA CCATTAGTAG GAGAAGCGCT
103   AGCTCGTGTG AAAAGAGCGG AGAAAAAATG GAGAGACAAA CGTGAAAAAT 3200
104   TGGAATGGGA AACAAATATC GTTTATAAAG AGGCAAAAGA ATCTGTAGAT
105   GCTTTATTTG TAAACTCTCA ATATGATCAA TTACAAGCGG ATACGAATAT 3300
106   TGCCATGATT CATGCGGCAG ATAAACGTGT TCATAGCATT CGAGAAGCTT
107   ATCTGCCTGA GCTGTCTGTG ATTCCGGGTG TCAATGCGGC TATTTTTGAA 3400
108   GAATTAGAAG GGCGTATTTT CACTGCATTC TCCCTATATG ATGCGAGAAA
109   TGTCATTAAA AATGGTGATT TTAATAATGG CTTATCCTGC TGGAACGTGA 3500
110   AAGGGCATGT AGATGTAGAA GAACAAAACA ACCAACGTTC GGTCCTTGTT
111   CTTCCGGAAT GGGAAGCAGA AGTGTCACAA GAAGTTCGTG TCTGTCCGGG 3600
112   TCGTGGCTAT ATCCTTCGTG TCACAGCGTA CAAGGAGGGA TATGGAGAAG
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GTTGCGTAAC CATTCATGAG ATCGAGAACA ATACAGACGA ACTGAAGTTT 3700
AGCAACTGCG TAGAAGAGGA AATCTATCCA AATAACACGG TAACGTGTAA
TGATTATACT GTAAATCAAG AAGAATACGG AGGTGCGTAC ACTTCTCGTA 3800
ATCGAGGATA TAACGAAGCT CCTTCCGTAC CAGCTGATTA TGCGTCAGTC
TATGAAGAAA AATCGTATAC AGATGGACGA AGAGAGAATC CTTGTGAATT 3900
TAACAGAGGG TATAGGGATT ACACGCCACT ACCAGTTGGT TATGTGACAA
AAGAATTAGA ATACTTCCCA GAAACCGATA AGGTATGGAT TGAGATTGGA 4000
GAAACGGAAG GAACATTTAT CGTGGACAGC GTGGAATTAC TCCTTATGGA
GGAA (end HD-1) .
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50. A process for preparing pesticidal chimeric toxin SYW1 having the following amino acid sequence:

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M D N N P N I N E C I P Y N C L S N P E V E V L G G E R I E
T G Y T P I D I S L S L T Q F L L S E F V P G A G F V L G L
V D I I W G I F G P S Q W D A F L V Q I E Q L I N Q R I E E
F A R N Q A I S R L E G L S N L Y Q I Y A E S F R E W E A D
P T N P A L R E E M R I Q F N D M N S A L T T A I P L F A V
Q N Y Q V P L L S V Y V Q A A N L H L S V L R D V S V F G Q
R W G F D A A T I N S R Y N D L T R L I G N Y T D Y A V R W
Y N T G L E R V W G P D S R D W V R Y N Q F R R E L T L T V
L D I V A L F P N Y D S R R Y P I R T V S Q L T R E I Y T N
P V L E N F D G S F R G S A Q G I E G S I R S P H L M D I L
N S I T I Y T D A H R G E Y Y W S G H Q I M A S P V G F S G
P E F T F P L Y G T M G N A A P Q Q R I V A Q L G Q G V Y R
T L S S T L Y R R P F N I G I N N Q Q L S V L D G T E F A Y
G T S S N L P S A V Y R K S G T V D S L D E I P P Q N N N V
P P R Q G F S H R L S H V S M F R S G F S N S S V S I I R A
P T F S W Q H R S A E F N N I I P S S Q I T Q I P L T K S T
N L G S G T S V V K G P G F T G G D I L R R T S P G Q I S T
L R V N I T A P L S Q R Y R V R I R Y A S T T N L Q F H T S
I D G R P I N Q G N F S A T M S S G S N L Q S G S F R T V G
F T T P F N F S N G S S V F T L S A H V F N S G N E V Y I D
R I E F V P A E V T F E A E Y D L E R A Q K A V N E L F T S
S N Q I G L K T D V T D Y H I D Q V S N L V E C L S D E F C
L D E K K E L S E K V K H A K R L S D E R N L L Q D P N F R
G I N R Q L D R G W R G S T D I T I Q G G D D V F K E N Y V
T L L G T F D E C Y P T Y L Y Q K I D E S K L K A Y T R Y Q
L R G Y I E D S Q D L E I Y L I R Y N A K H E T V N V P G T
G S L W P L S A Q S P I G K C G E P N R C A P H L E W N P D
L D C S C R D G E K C A H H S H H F S L D I D V G C T D L N
E D L G V W V I F K I K T Q D G H A R L G N L E F L E E K P
L V G E A L A R V K R A E K K W R D K R E K L E W E T N I V
Y K E A K E S V D A L F V N S Q Y D Q L Q A D T N I A M I H
A A D K R V H S I R E A Y L P E L S V I P G V N A A I F E E
L E G R I F T A F S L Y D A R N V I K N G D F N N G L S C W
N V K G H V D V E E Q N N Q R S V L V L P E W E A E V S Q E
V R V C P G R G Y I L R V T A Y K E G Y G E G C V T I H E I
E N N T D E L K F S N C V E E E I Y P N N T V T C N D Y T V
N Q E E Y G G A Y T S R N R G Y N E A P S V P A D Y A S V Y
E E K S Y T D G R R E N P C E F N R G Y R D Y T P L P V G Y
V T K E L E Y F P E T D K V W I E I G E T E G T F I V D S V
E L L L M E E
```

which comprises culturing a prokaryotic microbe hosting a recombinant DNA transfer vector, denoted pSYW1, comprising DNA having the following nucleotide sequence or equivalent nucleotide sequences containing bases whose translated region codes for the same amino acid sequence:

```
                (start HD-73)            ATG GATAACAATC 400
CGAACATCAA TGAATGCATT CCTTATAATT GTTTAAGTAA CCCTGAAGTA
GAAGTATTAG GTGGAGAAAG AATAGAAACT GGTTACACCC CAATCGATAT 500
TTCCTTGTCG CTAACGCAAT TTCTTTTGAG TGAATTTGTT CCCGGTGCTG
GATTTGTGTT AGGACTAGTT GATATAATAT GGGGAATTTT TGGTCCCTCT 600
CAATGGGACG CATTTCTTGT ACAAATTGAA CAGTTAATTA ACCAAAGAAT
AGAAGAATTC GCTAGGAACC AAGCCATTTC TAGATTAGAA GGACTAAGCA 700
ATCTTTATCA AATTTACGCA GAATCTTTTA GAGAGTGGGA AGCAGATCCT
ACTAATCCAG CATTAAGAGA AGAGATGCGT ATTCAATTCA ATGACATGAA 800
CAGTGCCCTT ACAACCGCTA TTCCTCTTTT TGCAGTTCAA AATTATCAAG
TTCCTCTTTT ATCAGTATAT GTTCAAGCTG CAAATTTACA TTTATCAGTT 900
TTGAGAGATG TTTCAGTGTT TGGACAAAGG TGGGGATTTG ATGCCGCGAC
TATCAATAGT CGTTATAATG ATTTAACTAG GCTTATTGGC AACTATACAG 1000
ATTATGCTGT ACGCTGGTAC AATACGGGAT TAGAACGTGT ATGGGGACCG
GATTCTAGAG ATTGGGTAAG GTATAATCAA TTTAGAAGAG AATTAACACT 1100
AACTGTATTA GATATCGTTG CTCTGTTTCC GAATTATGAT AGTAGAAGAT
ATCCAATTCG AACAGTTTCC CAATTAACAA GAGAAATTTA TACAAACCCA 1200
GTATTAGAAA ATTTTGATGG TAGTTTTCGA GGCTCGGCTC AGGGCATAGA
AGGAAGTATT AGGAGTCCAC ATTTGATGGA TATACTTAAC AGTATAACCA 1300
TCTATACGGA TGCTCATAAA GGGGAATATT ATTGGTCAGG GCATCAAATA
ATGGCTTCTC CTGTAGGGTT TTCGGGGCCA GAATTCACTT TTCCGCTATA 1400
TGGAACTATG GGAAATGCAG CTCCACAACA ACGTATTGTT GCTCAACTAG
GTCAGGGCGT GTATAGAACA TTATCGTCCA CTTTATATAG AAGACCTTTT 1500
AATATAGGGA TAAATAATCA ACAACTATCT GTTCTTGACG GGACAGAATT
TGCTTATGGA ACCTCCTCAA ATTTGCCATC CGCTGTATAC AGAAAAAGCG 1600
GAACGGTAGA TTCGCTGGAT GAAATACCGC CACAGAATAA CAACGTGCCA
CCTAGGCAAG GATTTAGTCA TCGATTAAGC CATGTTTCAA TGTTTCGTTC 1700
AGGCTTTAGT AATAGTAGTG TAAGTATAAT AAGAGCT (end hd-73)
    (start HD-1)          CCAACGT TTTCTTGGCA GCATCGCAGT 1900
GCTGAATTTA ATAATATAAT TCCTTCATCA CAAATTACAC AAATACCTTT
AACAAAATCT ACTAATCTTG GCTCTGGAAC TTCTGTCGTT AAAGGACCAG 2000
GATTTACAGG AGGAGATATT CTTCGAAGAA CTTCACCTGG CCAGATTTCA
ACCTTAAGAG TAAATATTAC TGCACCATTA TCACAAAGAT ATCGGGTAAG 2100
AATTCGCTAC GCTTCTACTA CAAATTTACA ATTCCATACA TCAATTGACG
GAAGACCTAT TAATCAGGGT AATTTTTCAG CAACTATGAG TAGTGGGAGT 2200
AATTTACAGT CCGGAAGCTT TAGGACTGTA GGTTTTACTA CTCCGTTTAA
CTTTTCAAAT GGATCAAGTG TATTTACGTT AAGTGCTCAT GTCTTCAATT 2300
CAGGCAATGA AGTTTATATA GATCGAATTG AATTTGTTCC GGCAGAAGTA
ACCTTTGAGG CAGAATATGA TTTAGAAAGA GCACAAAAGG CGGTGAATGA 2400
GCTGTTTACT TCTTCCAATC AAATCGGGTT AAAAACAGAT GTGACGGATT
ATCATATTGA TCAAGTATCC AATTTAGTTG AGTGTTTATC AGATGAATTT 2500
TGTCTGGATG AAAAACAAGA ATTGTCCGAG AAAGTCAAAC ATGCGAAGCG
ACTTAGTGAT GAGCGGAATT TACTTCAAGA TCCAAACTTC AGAGGGATCA 2600
ATAGACAACT AGACCGTGGC TGGAGAGGAA GTACGGATAT TACCATCCAA
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GGAGGCGATG ACGTATTCAA AGAGAATTAC GTTACGCTAT TGGGTACCTT 2700
TGATGAGTGC TATCCAACGT ATTTATATCA AAAAATAGAT GAGTCGAAAT
TAAAAGCCTA TACCCGTTAT CAATTAAGAG GGTATATCGA AGATAGTCAA 2800
GACTTAGAAA TCTATTTAAT TCGCTACAAT GCAAAACATG AAACAGTAAA
TGTGCCAGGT ACGGGTTCCT TATGGCCGCT TTCAGCCCAA AGTCCAATCG 2900
GAAAGTGTGG AGAGCCGAAT CGATGCGCGC CACACCTTGA ATGGAATCCT
GACTTAGATT GTTCGTGTAG GGATGGAGAA AAGTGTGCCC ATCATTCGCA 3000
TCATTTCTCC TTAGACATTG ATGTAGGATG TACAGACTTA AATGAGGACC
TAGGTGTATG GGTGATCTTT AAGATTAAGA CGCAAGATGG GCACGCAAGA 3100
CTAGGGAATC TAGAGTTTCT CGAAGAGAAA CCATTAGTAG GAGAAGCGCT
AGCTCGTGTG AAAAGAGCGG AGAAAAAATG GAGAGACAAA CGTGAAAAAT 3200
TGGAATGGGA AACAAATATC GTTTATAAAG AGGCAAAAGA ATCTGTAGAT
GCTTTATTTG TAAACTCTCA ATATGATCAA TTACAAGCGG ATACGAATAT 3300
TGCCATGATT CATGCGGCAG ATAAACGTGT TCATAGCATT CGAGAAGCTT
ATCTGCCTGA GCTGTCTGTG ATTCCGGGTG TCAATGCGGC TATTTTTGAA 3400
GAATTAGAAG GGCGTATTTT CACTGCATTC TCCCTATATG ATGCGAGAAA
TGTCATTAAA AATGGTGATT TTAATAATGG CTTATCCTGC TGGAACGTGA 3500
AAGGGCATGT AGATGTAGAA GAACAAAACA ACCAACGTTC GGTCCTTGTT
CTTCCGGAAT GGGAAGCAGA AGTGTCACAA GAAGTTCGTG TCTGTCCGGG 3600
TCGTGGCTAT ATCCTTCGTG TCACAGCGTA CAAGGAGGGA TATGGAGAAG
GTTGCGTAAC CATTCATGAG ATCGAGAACA ATACAGACGA ACTGAAGTTT 3700
AGCAACTGCG TAGAAGAGGA AATCTATCCA AATAACACGG TAACGTGTAA
TGATTATACT GTAAATCAAG AAGAATACGG AGGTGCGTAC ACTTCTCGTA 3800
ATCGAGGATA TAACGAAGCT CCTTCCGTAC CAGCTGATTA TGCGTCAGTC
TATGAAGAAA AATCGTATAC AGATGGACGA AGAGAGAATC CTTGTGAATT 3900
TAACAGAGGG TATAGGGATT ACACGCCACT ACCAGTTGGT TATGTGACAA
AAGAATTAGA ATACTTCCCA GAAACCGATA AGGTATGGAT TGAGATTGGA 4000
GAAACGGAAG GAACATTTAT CGTGGACAGC GTGGAATTAC TCCTTATGGA
GGAA (end HD-1).
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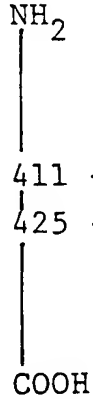
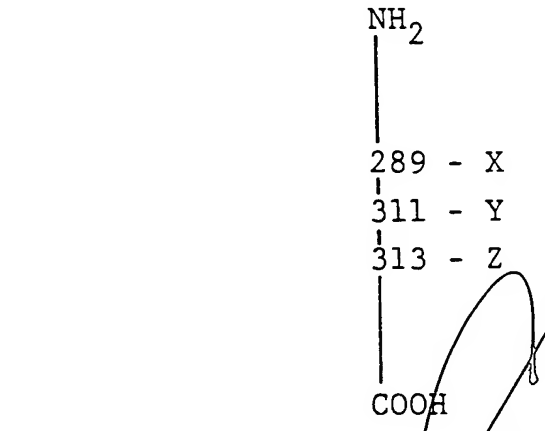
51. A chimeric toxin, having the amino acid sequence of toxin EW3, with changes which can be shown schematically as follows:



wherein X is one of the 20 common amino acids except Asp when the amino acid at position 425 is Gly; Y is one of the 20 common amino acids except Gly when the amino acid at position 411 is Asp.

52. A chimeric toxin, having the amino acid sequence of toxin EW3, with changes which can be shown schematically as follows:



wherein X is one of the 20 common amino acids except Arg when the amino acid at position 311 is Arg and the amino acid at position 313 is Tyr; Y is one of the 20 common amino acids except Arg when the amino acid at position 289 is Arg and the amino acid at position 313 is Tyr; and Z is one of the 20 common amino acids except Tyr when the amino acid at position 289 is Arg and the amino acid at position 311 is Arg.

53. DNA encoding a chimeric toxin as shown in claim 51.

54. DNA encoding a chimeric toxin as shown in claim 52.

55. A recombinant DNA transfer vector comprising DNA encoding a chimeric toxin as shown in claim 51.

56. A recombinant DNA transfer vector comprising DNA encoding a chimeric toxin as shown in claim 52.

57. A chimeric toxin comprising the variable region or regions of two or more Bacillus toxins.

58. A toxin, according to claim 57, wherein the Bacillus toxins are B. thuringiensis toxins.

59. A toxin, according to claim 58, wherein the B. thuringiensis toxins are B. thuringiensis var. kurstaki HD-1 toxin and B. thuringiensis var. kurstaki HD-73 toxin.

60. A toxin, according to claim 58, wherein the B. thuringiensis toxins are encoded by a pesticide-producing strain of Bacillus thuringiensis, consisting of B. thuringiensis M-7, B. thuringiensis var. kurstaki, B. thuringiensis var. finitimus, B. thuringiensis var. alesti, B. thuringiensis var. sotto, B. thuringiensis var. dendrolimus, B. thuringiensis var. kenyae, B. thuringiensis var. galleriae, B. thuringiensis var. canadensis, B. thuringiensis var. entomocidus, B. thuringiensis var. subtoxicus, B. thuringiensis var. aizawai, B. thuringiensis var. morrisoni, B. thuringiensis var. ostriniae, B. thuringiensis var. tolworthi, B. thuringiensis var. darmstadiensis, B. thuringiensis var. toumanoffi, B. thuringiensis var. kyushuensis, B. thuringiensis var. thompsoni, B. thuringiensis var. pakistani, B. thuringiensis var. israelensis, B. thuringiensis var. indiana, B. thuringiensis var. dakota,

B. *thuringiensis* var. *tohokuensis*, *B*. *thuringiensis* var. *kumanotoensis*, *B*. *thuringiensis* var. *tochigiensis*, *B*. *thuringiensis* var. *colmeri*, *B*. *thuringiensis* var. *wuhanensis*, *B*. *thuringiensis* var. *tenebrionis*, *B*. *thuringiensis* var. *thuringiensis*, and other *Bacillus* species selected from *B*. *cereus*, *B*. *moritai*, *B*. *popilliae*, *B*. *lentimorbus*, and *B*. *sphaericus*.